



AND THE MILLING ENGINEER.

Fourteenth Year.—No. 9.

MILWAUKEE, SEPTEMBER, 1889.

Subscription Price, \$1.00 Per Year.

STILWELL &amp; BIERCE MFG. CO.

—\* DAYTON, OHIO, U. S. A. \*

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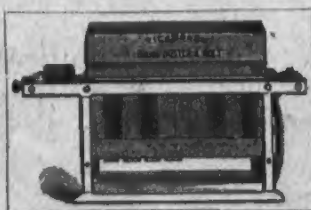
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RICHMOND

Grain-Cleaning-Machinery

AND

BRAN DUSTERS



Empire Horizontal Bran Duster.

CAIN, HANTHORN & CO.,  
Model Roller Flour Mills,  
CAPACITY 400 BARRELS.

ATCHISON, KANSAS, June 24th, 1889.

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- 3 Empire Horizontal Bran Dusters;

All of your manufacture, and consider the work being done of superior quality. In fact, better than could be produced on any other line of machines using the same number of machines.

Yours truly,

W. C. WINCHESTER, Head Miller.

RICHMOND MANUFACTURING CO.

LOCKPORT, N. Y., U. S. A.

Hughes Bros. Steam Pump Co.,  
CLEVELAND, OHIO.

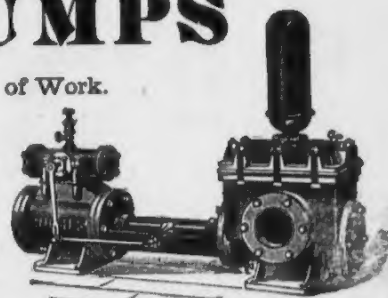
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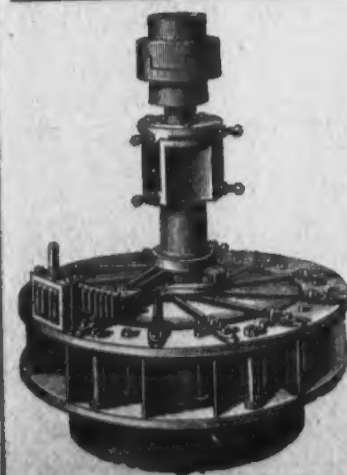
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The Reliance Purifier.

∴ PLEASE REMEMBER THAT ∴

**NOT ONE** of the above-named machines was ever taken out of any mill in America, large or small, because of failure to do its work properly. All statements to the contrary are made either from misinformation or from a deliberate intention to mislead.

**EVERY MILL** built by us during the last two or three years, including the largest and best built in America in that period, uses this line of machines and gives them an emphatic endorsement.

**THIS LINE OF MACHINES** was selected by the Duluth Imperial Mill Co, for its splendid 2,000 bbl. mill, after a most thorough and exhaustive investigation in Minneapolis and elsewhere, as being unquestionably the best the market affords. This was in the face of every form of misrepresentation that could be used against our machines.

**LARGE ORDERS** for our Rolls, Reels and Purifiers are coming in daily from the leading mills in Minneapolis during their annual shut-down for repairs. That shows what is thought of our work in the greatest milling center in America.

**THE VALUE** of any machine or system can be gauged to a nicety by the bitterness and unscrupulousness of the warfare against it by would-be rivals. Judged by this standard (and there is no safer one) our line of machines stands without an equal.

**IT IS TO YOUR INTEREST** to know the truth and to get the best. Let us know your wants and we can give you favorable figures, and tell you where you can see our machines in operation.



# EDW. P. ALLIS & CO.



**Mill Builders and Mill Furnishers,**  
**RELIANCE WORKS, - - MILWAUKEE, WIS.**



# The United States MILLER

AND THE MILLING ENGINEER.

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Subscription Price, \$1.00 Per Year.

## THE USES OF MILLERS' ASSOCIATIONS.\*

**W**E are here for the purpose of doing what we can in behalf of ourselves and our business, and indirectly in behalf of the civilized world, for the civilized world depends largely upon millers for bread, the great staff of life. In our discussions we should consider milling, and the details appertaining to it, from beginning to end.

First would come, probably, wheat, the kind and variety best adapted to the needs of the progressive and scientific winter-wheat miller. I can only touch lightly upon this point, but I cannot forbear saying that there must be something wrong in our method of farming compared with that in Europe, for our average yield per acre is said to be only twelve bushels, against double that amount abroad. I am glad to say, however, that the winter-wheat yield in this section probably averages much more than twelve bushels to the acre—say eighteen. This could be largely increased by skillful and careful farming, and no one is more interested in such farming than ourselves. A farmer should feed the land while the land feeds him. He sows generally eight acres per day, and about one and a half bushels of wheat are used to the acre for seed. Now, Prof. Blount, of the Colorado Agricultural College, from seven and a half pounds of hand-picked seed raised from one acre sixty-seven bushels of most excellent wheat. This shows that it pays to take pains. I think it would be an excellent plan to distribute among our farmers pamphlets embodying the latest and most advanced ideas regarding the best varieties of wheat, and the best way and time of sowing. Besides the quantity of the yield, the quality is of great importance, and the condition in which it is brought to market. We should see that exact justice is done to each and every farmer. If one should bring to the mill a load of nice, clean, long-berry wheat, he should get an extra price for it, and it should be clearly understood that the wheat, and not the man selling it, was the cause of the extra amount paid.

Spring-wheat mills have been greatly aided in introducing and selling their flour by its strength, but we can by the use of the longberry and other wheats very nearly equal their flour in strength, while in color and in sweetness of the bread made from the flour we are far ahead. When the wheat comes to mill, we should be ready for it. The best wheat-cleaning machinery in the market affords us a theme of fruitful discussion, as well as the rest of the machinery in our mills.

I have no doubt but that among my hearers are some strong advocates of the two great systems of the day, the long and the short. Now is the time for both to proclaim their strong points. After our wheat has been milled in the best way possible with the mills at our disposal, comes the placing of the finished product. Of course, we never do get enough for what we have to sell. The flour market seems always glutted, while mill feed has never been lower in my recollection. I do not see much hope of

our being able to fix upon uniform prices in this time of rapid fluctuations in the wheat market.

Millers should be educated against the silly cutting of prices. It is for the advantage of the consumer and middle man, as well as the miller, that frequent and wide fluctuations in the price of flour should be avoided. Our associations, however, can do little to prevent this until it is larger and more powerful, embracing, as it should, all the millers in Northern Indiana.

But there is plenty for us to do. Let us get acquainted. Nothing will do us more good than to get away from home and the care, worry, and anxiety of business, at least as often as once in three months, and have a good sociable time with our fraternity in a reasonable way. As far as practicable, I think it would be a good idea to have our mill men attend these meetings—our head millers at least. The rest and recreation, to say nothing of

## NEW WORKS OF THE J. B. ALLFREE CO.

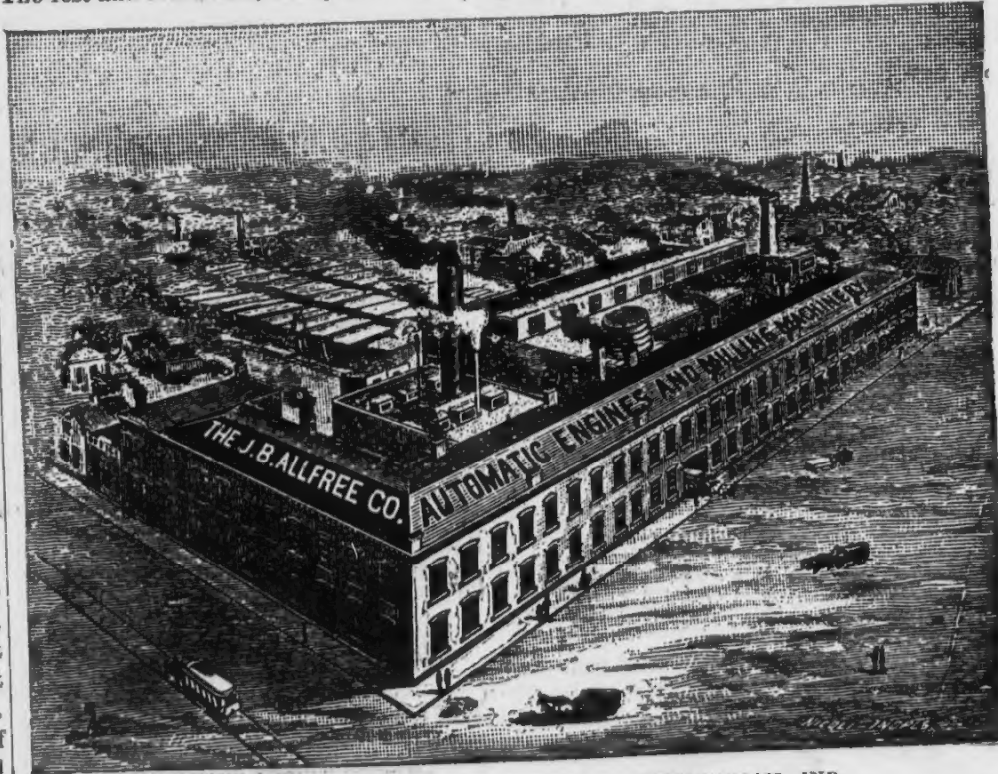
**T**HE J. B. ALLFREE CO., Indianapolis, Ind., whose immense and rapidly increasing business made it necessary that they have more space than their old site would permit of, are now occupying their new quarters, of which we herewith give an illustration.—The new works are located at numbers 76 to 86 Shelby street and cover an area of fully two acres of ground; they are equipped with the very latest improved machinery in all the departments. The whole works are piped for natural gas which is used for fuel and lighting purposes. In the wood-working department there are the usual cutting out and erecting shops, and in the iron-working department a general shop for gearing, pulleys, shafting, and other general work, and also a shop for the corrugation of rolls, etc. In addition to these there is a sheet-iron and tanners' department, and a special department for making up bolting cloths. The draughting

ferment, and instead of a partial change of the starch into sugar, the most of it was in the bread in the form of starch—lacking sweetness, and altogether unsatisfactory except to the baker—for it would absorb water like "all smoke," and still be dry as a bone, because the starch cells (which may number two or three hundred) in the center of a single grain of "sharp" flour would not receive the action from the water or ferment. The central cells would absorb the surplus water from the outside cells, leaving the loaf dry and harsh, and would not receive any action from the ferment that changed the starch into sugar, and hence the bread lacked sweetness.

It does not destroy the force of the above to assert that corn flour would lack the property of raising because of a nearly entire absence of glutinous properties. For culinary purposes corn would never usurp wheat, but many new and popular uses would be developed. Glutinous properties could be given by mixing with wheaten flour. The drift of these remarks is to the effect that the uses of corn foods are but little understood either in the kitchen or in the mill. Viewed as foods the two must be taken together. A change in milling would involve more or less change in cooking. We hazard little in saying that great changes are liable in both, and with the attention now being given to both branches of the subject the changes are likely to come soon.—Corn Miller.

## GLUCOSE MANUFACTURE.

The following is the process for making glucose: The shelled corn is first soaked or several days in water, to soften the hull and prepare it for the cracking process. The softened corn is conveyed by elevators to one of the highest stories of the factory, and shoveled into large hoppers, from whence it passes into mills that merely crack the grains without reducing them at once to a fine meal. The cracked grain is then conducted to a large tank filled with rinsing water. The hulls of the corn float at the top of the water, the germs sink to the bottom, and the portions of the grain containing the starch, becoming gradually reduced to flour by friction, are held in solution in the water. By an ingenious process both the hulls and the germs are removed, and the flour part now held in solution contains nothing but starch and gluten. This liquid is made to flow over a series of tables, representing several acres in area, and the difference in the specific gravity of the two substances causes the gluten and the starch to separate without the use of chemicals. The gluten is of a golden yellow color, and the starch snow white. By the time the gluten is completely eliminated the starch assumes a plastic form, and is collected from the separating tables by wheelbarrows and taken to a drying-room, where it is prepared as the starch of commerce, or is placed in a chemical apparatus to be converted into glucose.



NEW WORKS OF THE J. B. ALLFREE CO., INDIANAPOLIS, IND.

the milling points they may pick up, will well repay them for the time taken.

The matter of mill insurance should receive our careful consideration. I, myself, am decidedly in favor of mutual companies. Such insurance costs, as far as my experience extends, but little over half the rate that ordinary board companies charge.

The important question of getting our product to market by the cheapest routes should not be forgotten. The great trunk lines have virtually a pool, and they meet at Chicago and fix the price to suit themselves. When lake navigation is closed, we are on even terms with the territory west of Chicago, but in the summer time the difference between lake-and-rail and all-rail rates is far too wide, thus giving the Western mills a great advantage over those east of Chicago. All the latter mills, therefore, are interested in this matter, whether they dispose of their product east or not, for the large mills will sell wherever they can get the most money. If not east, then the battle is all the hotter here at home.

\*From an address by President F. B. Hawks, before the Northern Indiana Millers' Association.

rooms and general offices are on the south side of the works. We congratulate the J. B. Allfree Co. upon their having one of the most complete and convenient plants of its kind in this country, and on the fact that the merit of their productions necessitated its erection.

## CHANGES IN CORN FOODS.

For many purposes of the culinary art, the process of reducing corn meal is not carried far enough. The meal is left too coarse, and it must either be placed on the table half-cooked, or cooked so long that many of its properties are changed. It is rare that corn meal is passed through a number 60 wire cloth, and yet such bolting will leave the product in grains, each containing many hundred starch cells. Several years ago it was considered the thing to have wheat flour "sharp," and the "fad" was carried to an extent that patent flour was often only very fine middlings. Its bread product was harsh and dry—tasteless and without tenacity after it had been baked a few hours. The cause for this was that the particles were too large to be readily acted upon by the



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We do Stamping and Pressing of Sheet Metals for All Classes of Work. Also Tinning, Galvanizing &amp; Japanning.

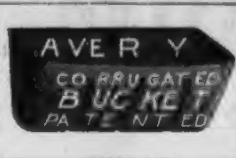
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INSIST on having this Bucket furnished when ordering.

Ask your dealer for the Avery Pat. Seamless Steel Elev. Bucket

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CALDWELL PATENT.

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GEARS.**MANILLA ROPE.**

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**CHICAGO:** 11 to 23 S. Jefferson St.**MINNEAPOLIS:** 200 to 202 Washington Ave. S.**MILL WANTED.**

The city of Garden City, Kansas, has voted aid to erect a flouring mill at that place, and will receive bids at the City Clerk office up to September 25, 1889, for a 75 barrel, a 100, or a 140 barrel grist mill, with a 25 ton feed mill attached. All proposition must be accompanied with a full statement of all machinery, size of engine, and size and kind of building and amount of aid wanted for each.

This is a good wheat country and a splendid opportunity for a good miller.

DESSIE MOTHERSHEAD, City Clerk.

**Flour AND Grain Testing Appliances**

AND SPECIALTIES FOR THE

**MILLING, FLOUR AND GRAIN TRADES.****Deal's Improved Grain Tester**

Cannot be Surpassed for Accuracy and Durability.



Thousands of them in successful use in all parts of the United States and Canada. We make three sizes. Special prices on application.

Now is the Time to Order your Grain Tester for New Wheat.

**The Clipper Baking Test for Flour is the Greatest "Eye-Opener."**

Invented in this line. Hundreds of them in successful operation among the largest and best mills in the United States and foreign countries.

This has been illustrated and advertised in the leading papers throughout the country. Prices and full particulars mailed on application. New Illustrated Folder now in Press. Should be pleased to hear from all parties interested.

**H. J. DEAL'S SPECIALTY CO.,**  
**BUCYRUS, OHIO.**

**J. B. A. KERN & SON, Merchant Millers,**

Capacity 2,000 Barrels Per Day.

MILWAUKEE, WIS.

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**RYE + FLOUR**

By most approved roller process, guaranteed the best and purest rye flour manufactured WE INVITE CORRESPONDENCE FROM CASH BUYERS.

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If you are about to build write to the UNITED STATES MILLER for a copy of "Brean's House Plans," and enclose fifty cents in stamps. It will help you.

THE publisher of the UNITED STATES MILLER is desirous of having the names and addresses of Head Millers, Millwrights and Head Engineers in all mills having a capacity of 150 bbls. per day or more.

**FOR SALE AND TO RENT.**

[Short ads. inserted in this column for \$1 per insertion.]

**FOR SALE OR LEASE.** Mill site and improved water power for sale or lease on good terms, or will turn the property in and take partnership in flour milling business with a practical man who can furnish additional capital required. Address, F. P. BLAKE, Canon City, Colo.

**FOR SALE OR LEASE.** Fine elevator and milling property. A 150-barrel roller mill, located in central South Dakota; also two elevators, capacity 25,000 and 35,000 bushels; easy terms; small amount cash down, balance long time, low rate interest. Good crop of finest quality of wheat secured in this section. Investigation invited. Full particulars by addressing, X. X. UNITED STATES MILLER, Sepst Milwaukee, Wis.

**FOR SALE.** A full roller process flouring mill, 100 barrels' capacity. Equipped with most approved modern machinery. Built less than one year. Citizens gave a bonus of \$2,500, which I will allow to purchaser of mill. Having an interest in a mill furnishing business, I desire to give it all my time. Full particulars on application. H. C. DUTTON, Port Austin, Mich.

**WANTED.**

**PARTNER WANTED.** A practical miller, owns a first-class water-power in Dunn County, Wis. It has rock bottom and rock banks. It is worthy of careful inspection. No mill within 20 miles. Would be plenty of custom trade. The owner has not sufficient means to build a mill and wants a partner with from \$4,000 to \$6,000 to take an interest with him. If you mean straight business, write or come and see A. BELLACH, Red Cedar Falls, Dunn Co., Wis.

**PARTNER WANTED.** A sober, industrious man, who understands the flour milling business, and has a capital of three thousand dollars. For particulars apply to W. J. MILLER & Co., Ballinger, Texas.

**WANTED.** A position as head miller in a mill from 150 bbls. upwards, by a miller of over 20 years' experience in first-class mills; have been in charge in mills from 200 to 800 bbls. capacity for 12 years; have first-class references; 10 years in one mill. Address MILLER, care of U. S. Miller, Milwaukee, Wis.

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E. HARRISON CAWKER, EDITOR.

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To Canadian subscribers, postage prepaid..... 1.00  
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(Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.)

MILWAUKEE, SEPTEMBER, 1889.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER AND THE MILLING ENGINEER. You will thereby oblige not only this paper, but the advertisers.

WE send out a number of SAMPLE COPIES of this issue. We solicit a critical examination of our Journal and invite you to subscribe. The price is one dollar per year. No premiums—no discount. Our October number will contain matters of special interest to millers which you will not find elsewhere.

IT has been decided that a patent granted on a foreign invention expires at the same time that the foreign patent does.

THE total value of the exports of breadstuffs from the United States for the month of August were valued at \$1,299,050.

IT is to be hoped that the October Congress of the Three Americas will prove of great benefit to our foreign relations on this continent.

THE *Northwestern Miller*, Minneapolis will shortly issue a neat little book for millers entitled "Hints on exporting" at the nominal price of 25 cents.

NEW YORK and Chicago are each straining every nerve to secure the World's Fair for 1892. We hope Chicago will get it, and it certainly stands a good chance in the contest.

THERE is a good demand for wheat heaters, especially in the winter wheat states, as the grain is reported not to be in a first-class condition for milling yet without using them.

IT is quite probable that an extra session of Congress will be called to meet about the middle of October, to revise the tariff and internal revenue laws with a view of reducing the revenue.

THE *Duluth News* of August 25 contains a two page illustrated description of ancient and modern milling, the latter being illustrated in the case of the Duluth Imperial Roller Mill of that city, which is just being completed.

A considerable quantity of flour shipped from the Willamette Valley to China became mill-dewed soon after arriving in the warehouse. A change in the method of milling and packing would doubtless end the trouble.

OUR own Yankee Tom. Edison went to Europe and through the especial favor of King Humbert of Italy will come back as Count Thomas of Menlo Park. The best report of all, however, is, to use an Americanism, "His head ain't swelled a bit."

THE August number of the *Electrical Mechanical and Milling News*, of Toronto, Canada, is a most excellent one. It shows enterprise and thrift and deserves the esteem and patronage of every Dominion miller. The Dominion Millers' Association will find it a valuable ally in carrying out important work which they have taken up for the benefit of Canadian milling interests.

IT is estimated that the receipts of corn at Duluth for 1889 will reach 2,500,000 bushels against 259,000 bushels in 1888. The corn comes principally from Nebraska and Iowa. The immense growth of this trade in corn via Duluth is surprising.

SUCH complications of elevator grain certificates as Buffalo millers and dealers have had to contend with recently are decidedly disagreeable, to say the least, and to an outside observer appear to be strongly tinged with dishonesty somewhere.

THE National Association of British and Irish Millers held a very successful annual convention in Paris during August. R. W. Appleton, of Stockton-on-Tees, was elected president. We would suggest the feasibility of the Association holding its 1892 meeting at the World's Exposition in Chicago.

THE Consolidated Roller Mill Co. have applied for injunctions to restrain The Wilford & Northway Mfg. Co. of Minneapolis and The Phoenix Iron Works Co. of North St. Paul, Minn., from infringement of their roller-mill patents. All parties express themselves as highly gratified and the prospects are that "the war will go bravely on" for some time to come. May Justice prevail.

IT is gratifying to learn that the trade between the United States and the West Indies has so increased during the past year that a number of British vessels have found it profitable to cross the ocean and go into the trade. It would be still more pleasing, however, to note that we had enough American vessels to do our carrying trade. That time, we believe, to be not far in the future.

A call for a general meeting of Indiana millers is announced to take place in Indianapolis on the second Tuesday in May, 1890. We trust that great interest will be taken in this matter, and that the largest gathering of Indiana millers ever held will take place at that time. The milling interests of Indiana are very great, and anything tending to develop them should be encouraged.

THE Waterway Convention held a very enthusiastic meeting at West Superior in August. Over 100 delegates were present. Resolutions were adopted to ask Congress to make appropriations for a ship channel 20 feet deep through the shallows and rivers connecting the great lakes; deepening the harbors in the lakes to accommodate vessels drawing 20 feet of water and surveying, lighting and improving the lake waterways to prepare them for the continually growing commerce.

WE take pleasure in calling the attention of millers to the handsome page announcement of Messrs. Edw. P. Allis & Co. elsewhere in this number. It is truthful, pointed and specific and will prove interesting reading to such millers as have been favored with a peculiar circular which has recently been mailed to a considerable portion of the milling public, in which very misleading statements are made relating to changes made several years ago in one of our large mills.

## THE PILLSBURY MILLS SOLD.

ON what is considered as good authority the announcement is made that the great Pillsbury Mills at Minneapolis, Minn., have been sold. If this is true, as we have reason to believe, it seems quite probable that the buyer is an English syndicate. It is an open secret that negotiations are being made with a number of milling firms in different parts of the country by parties representing English capital, and by another month we may be able to make some important announcements in relation thereto.

DAKOTA citizens show the right spirit all around. The North Dakota Millers' Association, one of the liveliest millers' associations in this country, at a meeting held in Fargo, Aug. 24, unanimously voted to ally their state organization to the Millers' National Association and elected their secretary Mr. John M. Turner, manager of the Mandan Roller Mill, representative in the executive committee. It is hoped that the South Dakota Association will soon follow the worthy example of their northern brethren.

## THE WHEAT SUPPLY.

THE current issue of *Bradstreet's* estimate a shortage of about 12,000,000 bushels in the wheat crop of the world as compared with the crop of last year. The following countries are credited with increases as follows: United States, 82,000,000; Canada, 8,000,000; England and France, 32,000,000; other countries, 32,000,000, in all 154,000,000 bushels. The decreases are: Russia, 72,000,000; Hungary, 36,000,000; Roumania, 8,000,000; Germany, 8,000,000; India, 18,000,000; other countries, 24,000,000, in all 156,000,000 bushels, or a net decrease of 12,000,000 bushels.

WE desire to call the special attention of millers to the announcement elsewhere of the Vortex Dust Collector Co. They do not propose to have the millers feel compelled to purchase any special dust collector to avoid infringement of patents. The Vortex machine is unquestionably a good one, performing its work as well and some say better than any other dust collector in the market, and the manufacturers say: "We will protect all who buy it and use it from damage or suit." Any of our readers can readily satisfy themselves of the entire responsibility of this company by applying for information through the usual channels of commercial inquiry.

DURING the month of July the fire losses in the United States and Canada, as compiled by *The Commercial Bulletin* aggregated \$11,020,500, exceeding the figures of the corresponding month last year by over \$500,000; on the other hand, however, the fire waste for the elapsed seven months of this year was \$75,306,500, against for the same period in 1888, \$77,789,320, and in 1887, \$76,928,100. This decrease, it is true, does not seem much when the totals are considered, but it must not be forgotten that year by year property values are mounting up at a rapid rate, and if by increased precautions the loss by fire can be kept even down to the limits of past years, it is a matter for some measure of gratification.

ALTHOUGH we do not consider the unprovoked attack made by the *American Miller* upon the present Secretary of the Millers' National Association worthy of rejoinder, any more than we did, to say the least, the ungenerous editorial comments made by that publication relative to THE UNITED STATES MILLER at the time that it effected the purchase of *The Milling Engineer* and consolidated the two papers—still we desire to express our opinion with other fair-minded contemporaries, that *The American Miller* is taking a puerile and unbusiness-like course simply for the sake of revenge for fancied slights, personal dislike, or perhaps disappointment in not being able to "manipulate" Mr. Barry heretofore as desired. Such a course cannot be creditable to any paper claiming respectability. The *A. M.* is perhaps constructing a bed which may prove very uneasy to lie upon. The question as to the writer of the article headed "Remarks on Milling Journalism by The Arizona Kicker, Jr.," published in this journal, which anyone of ordinary intelligence would recognize from the title, if in no other way, as a burlesque on the foolish habit of personal attacks in-

dulged in by some milling journals, has, we believe, nothing to do with the cause of the attack of the *A. M.* upon Mr. Barry. However, the idea which we hoped to convey, after the unkind comments showered upon us when *The Milling Engineer* was consolidated with THE UNITED STATES MILLER has become prominent at least, and the point has probably been grasped by some of the more capable intellects.

## JOSEPH G. LEMON.

IT becomes our painful duty to announce the death of Joseph G. Lemon, President of the Richmond City Mill Works, of Richmond, Ind.

Joseph G. Lemon was born at Leesburg, Kosciusko county, Ind., on July 28, 1843. The son of an itinerant Methodist preacher, his home in early life changed with the appointments of his father from place to place. His education was obtained mainly during four years (1852 to 1856) at Fort Wayne College, and afterward at Whitewater College, at Centerville, in Wayne county, Ind. He was an earnest student, and, though he retired from school at the early age of seventeen years, he had laid the foundation of a sound and practical education upon which he substantially built in after life. At seventeen he entered the business house of Israel Abrahams, at Centerville as a clerk. One year later, at the breaking out of the war of the rebellion, though still a mere youth, he patriotically volunteered in the defense of the Union, joining the 36th regiment of Indiana Volunteers as a private soldier. Promotion soon followed—first corporal, then lieutenant, at length for his soldierly qualities and fine business capacity, he was made adjutant of the regiment, a position rarely given to one so young, and therefore high evidence of good conduct and worth. He was with his regiment for nearly three years, participating in all the hard fought battles in which it was engaged. He was a prominent Mason, an Odd Fellow and a member of the post of G. A. R. of this city.

Mr. Lemon was a man of high character, strict integrity, honest and honorable in small as well as in great things. Of large business capacity, a useful and honored citizen, endeared to all who knew him as a Christian gentleman.

A family, consisting of his widow and two daughters, survive him.

## "HONOR TO WHOM HONOR IS DUE."

THE Millers' National Association has unquestionably a good record in the matter of protecting its members from all unjust or exorbitant demands of inventors of flour-milling machinery and processes of milling. The latest move of great importance in that direction is the protection of its members from demands for payment of royalties not only from what has come to be known as "THE BIG FOUR," composed of four very prominent manufacturers of roller-mills, but also from a half dozen other well-known manufacturers who have given bonds indemnifying users of rollers of their construction, from all judgments for damages or payment of royalties that might be obtained against said users by the corporation facetiously known as the "THE BIG FOUR."

Mr. S. H. Seamans, the late Secretary of the Millers' National Association long since saw how things were drifting and after innumerable conferences and much correspondence, secured absolute immunity from all prosecution by the Big Four for infringement of roller mill patents by bond duly executed March 9, 1887, and filed in the Secretary's office. Six other manufacturers then deemed it wise to file similar bonds. Mr. Seamans is justified in feeling proud of his record in this matter for he first conceived the idea and rested not until the conception became reality.

Even if some miller or combination of millers should fight the Consolidated

CONTINUED ON NEXT PAGE.



Roller Mill Co. clear through the Supreme Court of the United States and defeat them in the end, the cost, worry and uncertainty would outbalance by a thousand fold the few dollars that it would have cost March 8, 1887, to have been members in good standing of the association. Of course, joining the association now would not protect new members from claims above referred to, but there are claims for other patents that will no doubt soon be brought to the notice of the milling public.

**NEWS.**—The Consolidated Roller Milling Company of Chicago began an action Sept. 10, in the United States Circuit Court at Topeka, Kas., against the Great Western Manufacturing Company of Leavenworth for infringements of patents.

**BURNED.**—David Oliver's oat-meal mill at Olet, Ill.

**SCHNEIDER & BENOTSCH** have purchased Dick's mill at Harrison, O.

The Farmers Mill Co., are building a 50-bbl. roller mill at Lebanon, Tenn.

The Baltimore Corn and Flour Exchange will hereafter grade clover seed.

The Todd Milling Co., Dallas, Tex., own the Empire mills and Todd mills.

B. P. SHIVER & Co., Union Mills, Md., having remodelled to roller system, have just started up.

ST. PAUL, Minn., has contracted for a Dean pump for its water-works, of ten millions gallons daily capacity.

The three flour mills in Davenport, Ia., have "pooled their issues," and will hereafter run under one management.

The Eureka Flour Mill Co., La Otto, Ind., have built a 50-bbl. stone mill. Rollers will be added later, making it a short-system mill.

SCRUGGS & WHALEY's mill at Dallas, Tex., was badly wrecked by a terrific boiler explosion, Aug. 22. Fortunately no one was severely injured.

The Central Illinois corn mill, the property of C. O. Matheny & Co., Springfield, Ill., burned at an early hour Sept. 1, entailing a loss of \$17,000; insurance \$3,000.

The citizens of Bogard, Mo., are willing to offer good inducements to a good party to build a mill at that place. Write to T. J. Jones, Bogard, Mo., for particulars.

**BURNED.** Davis Bros.' mill and warehouse at Antigo, Wis.; also Eichstadt & Freeman's mill at Waterloo, Wis. Loss on the latter about \$12,000, with \$6,000 insurance.

A NUMBER of warehouses and barges filled with grain at Porta Costa, Straits of Carquinas, Cal., were destroyed by fire Aug. 26. Loss not less than \$600,000. G. W. McNear & Co. are the losers.

At Harrisonville, Mo., Sept. 10, fire destroyed the flour mill of W. H. Barrett and two warehouses belonging to the Missouri Pacific Railroad Company. The loss on the mill is \$35,000; insurance \$11,000. Loss to the warehouse, \$15,000; no insurance. The fire was of incendiary origin.

**FIRES.**—Sandy and Hawkins mill at Alliance, O., badly damaged.—Sears & Co.'s mill at Fowler, O., burned August 3.—Thos. R. Wagner's mill at Siluria, Ala., destroyed.—Henry Braman's mill at Killaway, N. Y.—Aug. 28, Robert Mariner's flour mill at Cadott, Wis.; loss \$10,000, insurance \$5,000.

**MILLS REMODELED.**—The Three Rivers Mill Co., Paducah, Ky., have remodelled their mill.—The following mills are all being remodelled now: S. H. Merton, St. Charles, Mo.; R. T. Davis Mill Co., Carroll, Mo.; J. C. Working & Co., Augusta, Ill.; Kauffman Milling Co., St. Louis Mo.; The last firm is building a 1,000,000-bush. elevator.

CHARLES E. MANOR, a Pennsylvania millwright of long experience, in a recent letter says: "Most all the Pennsylvania large mills have adopted the roller system, the Allis rolls and system prevailing largely, and now the smaller mills, of which there are a great number, are rapidly falling into line. This class of mills average from 15 to 25 bbls. capacity per day." The short system is universal in this class of mills.

The fifth wheat elevator for Fort Worth, Tex., is now being constructed, the third built this year. This city being the entrepot to the vast wheat fields of the pan-handle, which have only been opened two years, finds large grain-storage a necessity. This Texas wheat is exported to tropical countries without damage and the flour made from Texas wheat does not mold in hot climates. Fort Worth is now making 15,000 barrels of flour daily.

THE J. B. Allfree Co., Indianapolis, Ind., have recently booked the following contracts:

Rice Bros., Ladoga, Ind., 25-bbl. mill; Hartig Bros., Washington, Ind., 30-bbl. mill, which includes a full line of "Success Bolters, Keystone Roller Mills," etc., etc. They also report sales of special corn meal milling machinery to Parrish & Moor, Dresden, Tenn.; John Hanning Distillery Co., Owensboro, Ky.; Petersburg Milling Co., Petersburg, Ky.; Glenmore Distillery Co., Owensboro, Ky. They also report sales of numbers of special machines of their own manufacture, including Bran Dusters, Sieve Scalpers, Bolters, &c.

**MILLS BEING REMODELED OR IMPROVED.**—J. T. Crum & Son, Sandy, W. Va., changed to roller mill, 35-bbl. capacity; A. R. & W. J. McQuiston, Jamestown, Pa., are remodeling to a 50-bbl. roller mill; Crawn Bros., Mt. Crawford, Va., have changed to a 40-bbl. roller mill; Grimes Bros., of Lexington, N. C., have given their mill a general overhauling. A. M. Newill, Champion, Pa., has contracted for a 35-bbl. short system roller mill; Davenport & Morris, Waskey's Mills, Va., have contracted to remodel to roller system. W. H. Sanders, Wellsburg, W. Va., rebuilding on roller system; J. Knight's mill at Camden, Me., was totally destroyed by fire; John C. Saylor has remodelled to a 30-bbl. roller mill; B. S. Woodman, Langhorne, Pa., have remodelled to roller system; E. W. Pear at Unionville, Md., is remodeling his mill; a number of mill-owners in Pennsylvania, Maryland and West Virginia, who had their mills destroyed by floods this year, have determined to rebuild.

**NEW MILLS.**—Michael Hamer, Tyrone, Pa., has started up his mill on the Reitz short system.—Kirby Bros. new mill at Medford, N. J. has started up in good shape.—The Orange Mfg. Co., Orange C. H., Va., have contracted for an 800 bushel corn-meal mill.—B. G. Manor New Market, Va., will remodel to roller system.—J. M. Tapper, New Baltimore, Pa., has contracted for remodeling his mill.—D. S. Boyer, Hagarstown, Md., has contracted for a 50-bbl. roller mill.—Grant Barnitz, Carlisle, Pa., has remodelled and started up a neat roller mill.—Efforts are being made to organize a stock company to build a 50-bbl. roller mill at Manchester, Tenn.—Parsons, Clark & Clouser have contracted for a complete 35-bbl. roller mill.—G. M. Horter's new roller mill at Center Hill, Pa., is running well and turning out 50 bbls. of good flour daily.—Burlington, N. C., will probably soon have a flour mill.—The Empire Milling Company (corn mill) have incorporated with \$80,000 capital at Marietta, Ga.—The Luray (Va.) Mill Co. have recently sold out to a newly organized company which will improve the plant and increase the capacity.—W. S. Varner, Thomastown, Pa., have remodelled to a 40-bbl. roller mill.—D. Higley, Fayetteville, N. Y., will build a barley mill.—A. V. Morris & Son have purchased the Fort Johnson mill property at Akin, N. Y., and will improve it soon.—D. M. Klepser & Co., Martinsburg, Pa., are building a 75-bbl. roller mill.—The Hawkinsville Mill Co., Hawkinsville, Ga., has been organized and will build a mill. Steam power will be added to the water power to secure more power, in Jordan, Crampton & Co's mill, at Berlin, Pa. John Locke has concluded to rebuild his mill destroyed by the flood at Port Republic, Md.—It is reported that a mill will be built at Shadwell, Va.—The Columbia Milling Co. have contracted for a 200-bbl. roller mill.—The Farmers Alliance are contemplating the erection of a mill at Mangum, Tex.—Cunningham & Williams may build a mill at Scottsburg, Ky.—The Elk River Merchants Mill Co., will build at Prospect, Tenn.—The Hodges Mill Co., Watkins, Ga., have built a mill.—The Edgerton Mill Co., Edgerton, Mo., are building a 100-bbl. roller mill.—The Farmers Mill Co., Edwardsville, Ill., are building a 100-bbl. mill.—J. M. Bolling, Sedgewick, Mo., is building a 75-bbl. roller mill. Berrien Bros., Camp Point, Ill., are building a 100-bbl. roller mill.—W. B. Garrett & Co., Rosedale, Mo., are building a 75 bbl. roller mill.—J. D. Hopkins, San Saba, Texas, are building a 100-bbl. mill.—Boles & Boles of Blackwater, Mo., are building a 150-bbl. mill.—The Todds & Stanley Mill Furnishing Co., of St. Louis, Mo., have contracted to build a 3-run mill for B. M. De Arozarena, City of Mexico, and a 2-run mill for Terrozas & Brittingham, Chihuahua, Mexico.—A new mill and elevator has been contracted for at Staunton, Ill.—Carroll & Barclay have contracted for a 150 bbl. mill at Russellville, Ky. Sallee & Condon, Pleasant Hope, Mo., burnt out a short time since, will rebuild.—Pritchard & Duke are building a 40-bbl. mill at Tompkinsville, Ky.—C. A. Wade of Parkersburg, W. Va., have contracted for a roller mill.—Todd & Justus, of Richmond, Va., have contracted for a 600-bushel corn-meal mill.

A GOOD and cheap edition of Charles Dickens' complete works, and also of Walter Scott's novels, has just been issued. We can supply our readers with sets of either, delivered by mail, post free, for \$1.50. The volumes are of a handy size.

#### BRISTOL'S STEEL FASTENING.

The accompanying engravings illustrate a new type of belt fastening, manufactured by the Bristol Mfg. Co., of Waterbury, Conn., which on account of its resemblance in appearance and elasticity to the ordinary leather lacing, is called by them the "Steel Belt Lacing." It may be quickly and easily applied.

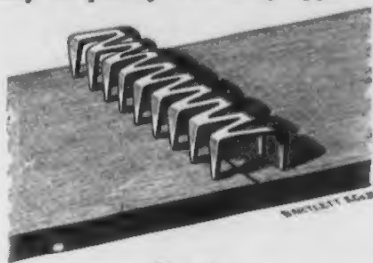


FIG. 1.

The Bristol fastening consists of a continuous zigzag strip of steel, having spurs alternating on opposite sides of a longitudinal center line, and bent at right angles as shown by Fig. 1, in which the fastening is represented as placed on the ends of a belt about to be joined. The spurs having been driven through the belt and clinched on the inside, the finished joint will appear as represented in Fig. 2.

The spurs should be driven through upon a piece of soft wood; then by laying the smooth side of the joint upon the

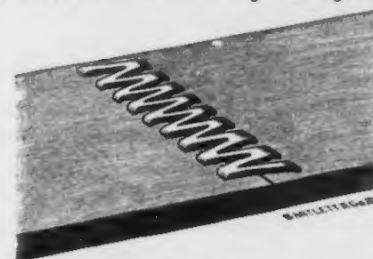


FIG. 2.

face of the pulley or any convenient piece of iron, the points may be clinched.

Fig. 1 represents the lacing placed in position, upon a belt to be joined.

Fig. 2 represents the finished joint after the spurs have been driven through and clinched. The fastening makes a smooth and elastic joint. No special tools are required.

#### SOMETHING FOR PATTERN-MAKERS.

BY P. S. DINGEY.

FROM the facts that there are so many different ways in pattern-making and moulding of doing the same kind of a job, arises a great deal of discussion at times in the pattern shop and foundry, and whenever it is carried on intelligently by men who understand their business, good is sure to result, and the chances are that the best way will be arrived at. On the other hand, there are those who are so eager to advance their own ideas, and have them carried out, that they are unwilling to consider those of others—such an individual is not likely to be very profitable to any concern, for he thinks more of airing his own ideas than of arriving at any results that might be of practical value.

Sometimes, after consulting over a piece of work, a very simple method is arrived at—so simple that we wonder afterward why we did not think of it before. The part of a frame is one of those jobs that at first looks a little troublesome for moulding, and yet, upon examination, the trouble vanishes. The shape of the frame was such as to necessitate casting the boxes down, the sides not being thick enough to allow it. This difficulty may be overcome by making the boxes loose, and locating them on the side of pattern with loose dowel pins that can be pulled while ramming up; two cores are made and dried for the boxes, and rammed up with the pattern, after which the cores are taken out, and the sides of boxes and the bracket are drawn out; replace the cores and cover over with sand, finish ramming up and roll over flask. There are other ways of making this pattern, as I have hinted; a core print might have been put on the pattern, and a core-box made with the box pattern in the

core-box, but it was thought that the above way of doing it was cleaner—this plan is adopted on many jobs where there is not room enough to draw in the loose pieces.

"Be sure you are right, and then go ahead," is an old saying that needs reiterating in the pattern shop, because that is the birth-place of mistakes; and in saying this, I do not intend any reflection on the pattern-maker, but rather the reverse. I think the responsibility that rests upon the pattern department, as to whether work turns out right, is equal to that of the drawing room; for while the draftsman is responsible for the design, upon the pattern-maker rests a large portion of the responsibility of executing that design. The liability to mistakes is reduced considerably when the machinist takes hold where the pattern-maker and moulder have left off; the machinist's part is no doubt the most important as to the workmanship and right working of machinery—he can make it good, bad or indifferent; but mistakes in measurement he is not so liable to as the pattern-maker, because the machinist has the casting, and is given the drawing of it with instructions to finish to drawing.

When a pattern-maker is given a drawing he has to imagine the casting before him, and build something that will produce it; it may be called a pattern, but often it is really not a pattern of what is wanted, because of the complexity of the casting; it is sometimes all core-boxes and no pattern, and here is where the responsibility comes in, and will, I think, explain why the pattern shop is the birth-place of mistakes.

Of course, mistakes ought not to occur; but as long as pattern-makers are fallible, they will occur sometimes, though the utmost precaution may be taken. I am always suspicious of the man that never makes mistakes; he is not to be trusted. It has not been my intention here to defend those careless pattern-makers who are constantly making blunders, but to show that, from the nature of the trade of machinery pattern-making, there is more danger of errors being made in that branch of machinery building than others, and I do think that the careful, industrious workman, who seldom makes an error, is worthy of consideration when he does happen to be caught—for such a man usually feels bad enough over his mistakes, without having any one try to make him feel worse.—*American Machinist.*

#### LUXURY IN RAILROAD TRAVEL.

Ours is undoubtedly the age of innovations, useful and pleasurable as well. Nothing that could be devised to increase the comforts of the traveling public has been overlooked, and onerous particularly is prominent in its regard for the convenience of its patrons. The C. C. C. & St. L. Railway, now better known as THE BIG FOUR ROUTE, in addition to advantages already offered the traveling public, has established a line of new Palace Sleeping Coaches, to be used on its through trains between Cincinnati and Chicago.

These cars, built especially for THE BIG FOUR ROUTE, by the WAGNER PALACE CAR COMPANY, are the very finest known in the railway service. Their interior finish is a marvel of upholstery, light mahogany and blue plush, heavy carpets and stylish drapery. Hot and cold water is provided in the several toilet-rooms. The buffet is a model of its kind, Electric bells communicate with all portions of the car, and in fact every detail which will add to the traveler's comfort or convenience has been provided.

No description could be adequate to the merits of these new coaches. They are palaces on wheels by day, sumptuous resting-places by night, a poet's dream and everybody's fancy at all times.

The arrangement of the drawing-room is a striking feature, affording all the comforts and privacy of a first-class hotel-room.

Lighted by the Pintsch compressed gas system, an absolutely safe illuminator, which provides twenty hours of continuous illumination with the incandescent power of five hundred candles.

With this new departure the BIG FOUR ROUTE is justly proud in offering to its patrons perfect safety, speed and luxury.



## TURNING POINTS IN SCIENTIFIC MILLING.\*

\* BY J. MURRAY CASE.

IN this paper I shall not presume to present anything new, but only to point out some of the essential rules in successful milling.

The money value of the product daily passing through a mill of ordinary capacity is so great, that seemingly insignificant matters become instrumental in making the successful or the unsuccessful mill.

A mill having a capacity for turning out £500 worth of flour daily, if a profit of 2 per cent. is realized on the output, will yield, in round numbers, £3,000 annually; 2 per cent. margin is not excessive, yet, if by small imperfection in the details of the mill the percentage on the profit side is reduced by the figure 4, and the mill loses £3,000, the amount will appear quite large, for no miller cares to pay £3,000 annually for the glory of operating an unsuccessful mill.

I give this illustration to emphasize my point, which is the necessity for close attention to minor details or the turning points in scientific milling.

There are some fundamental principles in roller milling of such vital importance that the changing of one spout, and the delivery of the material from that spout to the right place or the wrong place, will either make the mill profitable or unprofitable. It is no unfrequent occurrence for a milling expert to make changes in the mode of dealing with some special product, representing a cost of some £2, which makes many hundreds of pounds profit in the aggregate results of that mill during the year, and, in fact, produces such a revolution as to change the mill from an unsuccessful to a successful one. If this be conceded, and I dare say no thoroughly informed milling expert will deny it, then how vitally important to the mill owner these minor points become.

In a short essay I can only touch upon them briefly, but I give five essential rules:—

1. Make the reductions with special reference to broad bran, small amount of chipped wheat, large percentage of semolina, and least abrasion of bran possible.
2. Make the separation so that there shall be no return of material from the tail towards the head of the mill.
3. Never permit granular stock to reach the tail of the mill, or become intermingled with low grade products.
4. Make a separation of impure materials at every possible point and send it to low grade stock or the feed-bin.
5. Select your machines with special reference to the work to be done, and see that they are kept in perfect order.

These five rules embody the essence of scientific roller milling, assuming, of course, that the wheat has been well cleaned, which is a matter of vital importance.

In relation to the first rule, the reduction of wheat to semolina, there exists a great diversity of opinion as to the best plan. The tendency is in the direction of a less number of breaks, and to a more extended length of roll surface on each break. This matter of rapid reduction at the head of the mill has many advantages; it produces a much higher grade of break flour, and, if the corrugations are properly adapted to each break, there is also an equal or larger quantity of semolina produced, and a broader bran.

When partly broken wheat is passed successfully through corrugated rolls, as in the extended reduction system, and only gently operated upon, there is a gentle scraping of the bran, which produces a bran dust, and which, on account of its extreme fineness, passes the meshes of the silk along with the flour, and thus discolors it. If, on the other hand, we perform a large percentage of the work of reduction at the head of the mill, instead of producing this fine bran fibre that will

bolt, we are producing a coarse bran scale that will not bolt, and herein lies the principal advantage of rapid reduction.

To illustrate this more clearly, as it is an important point, I would say that if you take a knife and scrape a wheat berry three or four times gently, you will find bran powder produced so fine that it will bolt with the flour. Then instead of three gentle scrapings, make one severe scrape, and you will find a bran scale produced that will not bolt with the flour. With this material advantage in favor of rapid reduction, if other favorable conditions can at the same time be sustained, it is unquestionably the superior system.

I think it can be proved that four reductions, with adequate length of roll surface, and proper main break corrugation, is sufficient for any kind or condition of wheat, and that as large a quantity of semolina will be produced, a better break flour, and, at the same time, a broader, and fully as well-cleaned bran. If this be true then the matter of the number of breaks becomes one of the points in successful milling.

In making this statement of the number of breaks, I do not take into account the wheat-splitting machine, if used, as that can only be regarded as a wheat cleaner.

The second rule, "make no returns," is of vital importance. It not unfrequently happens that some material, rich in flour, but intermingled with impure stock, is passing off at some point in the mill. The miller thinks it too good to go to low grade or feed, and therefore sends it back to the break chop or some point ahead in the mill, but while this may reduce the quantity of low grade, and also make a cleaner offal, yet, at the same time, it will reduce the value of the flour, sometimes from 2s. to 4s. per sack. But suppose it reduces it but 1s., in a plant of 300 sacks we have a loss of £15 per day, or £4,500 per year. One spout is doing this disastrous business.

The milling engineer having left his newly constructed mill in good condition and running well, it not unfrequently happens that after a time the rolls get out of trim, the bolts more or less filled up, and machines generally not doing their work properly for want of adjustment and attention; then these rich tailings appear, and the miller shoots them back into the break chop, or to some roll or bolt in advance, and thus loads the mill with impure stock, which is wallowed back and forth until it is sufficiently reduced to bolt with the flour.

In all cases where there is a rich product either passing into feed or into the low grade stock, if the mill, when in good running condition, will not handle it properly, the mill owner should put in the necessary machinery to do so.

Sometimes an extra roll and bolt will pay for themselves half-a-dozen times over in the course of a year in the matter of making a clean finish and preventing returns.

The third rule, "Do not let granular stock reach the tail of the mill," is of almost equal importance. This rule is violated more than any other, and costs the millers of Europe and America a fabulous sum of money annually.

It is not unfrequently the case that inexperienced milling experts(?) so diagram the mill that a large quantity of fine semolina reaches the tail of the mill and becomes intermingled with the low grade stocks. That which ought to be patent flour either goes into low grade or feed—generally a large percentage of it into the latter, since fine semolina will not grind well with second germ stock or bran fibre. The woody substances hold the rolls apart so that the fine semolina is not reduced, and hence tails off to feed. The mill should be so diagramed that it would be impossible for fine semolina to reach the tail of the mill. This can only

be done by the proper numbers of cloth, and a sufficiency of smooth roller surface to ensure perfect reduction. I am an advocate of a short system at the head of the mill, but a proportionately elongated one at the tail. By this means the quantity of low grade flour can be materially decreased, and a perfect finish of the offal secured, and in many cases I would change a part of the corrugated rolls into smooth rolls, and the extra break scalpings into separating reels, and thus greatly improve the general results without additional machines.

The fourth rule given, that is, "To separate the pure from impure stocks at every point possible," is also important. Milling reduced to a science is simply an extended system of separating. When a reel, or purifier, or any other machine can be made to tail off a deleterious material it should be done at once, and this material sent to the low grade rolls or feed instead of carrying it through a successive number of rolls and reels, which is often done. Neither is it advisable to wallow semolina around through half-a-dozen grading reels, elevators, dusters, &c., which is sometimes done, to the great detriment of the general results. The aim should be to get every stock to its legitimate place, and the flour to the sack as soon as it can possibly be done, thus saving the continued abrasion and intermingling of impure stock with the pure in such a condition that it can not be separated.

In relation to the machines to be used, I am not here to advocate any special make. Every engineering firm of respectability in the milling line is making good machines, but it often occurs that they are not arranged in a manner to produce the best results.

The centrifugal reel is a machine of recognized merit, yet it may be used where it should not be, or where some other bolting machine would be better.

A perfectly equipped mill is one that possesses a specially constructed machine for each description of work, and each machine should be so arranged with regard to the others that no one of them should have either too much or too little to do. It is as great a mistake to have a bolt or purifier operate upon too small a quantity as it is to charge them beyond their capacity; in either case it is vain to look for satisfactory results. This I need scarcely point out to you, applies to the whole of the machines. A mill, in short, should resemble in its operation the organic action of a healthy human body, wherein each organ discharges its special functions, each is dependent upon the other, and the whole co-operate in producing that just balance of the system which is so essential to the maintenance of good health.

I may be permitted to mention one machine, which, so far, has not been introduced very extensively to European millers, and that is the "Inter-Elevator Bolt." This style of reel is now being made by every prominent American milling engineer, and no milling machine in America has ever met with such universal favor. As a separating machine on the break chop and the dusting of semolina it is unquestionably superior to any other class of reel. It is gentle in its action, and has a capacity almost equal to the centrifugal. It is used in America for all purposes except the dressing of low grade material, for which purpose the centrifugal is still in request.

Now in relation to the operation of a mill, I shall assume that every miller in Great Britain and on the Continent is a good miller, and that each attends to his duties properly, although I have known some millers who do not. I have seen purifiers running with a thick stream of semolina down the centre, the cloth bare on each side, and tailing off "rich" to low grade, and I have said, "There goes the two per cent. margin." I have seen rolls

running with a feed half-way across in a thick stream and chopping the bran up, and the semolina rolls in the same condition, and stock going through unground, and I have said, "There goes the two per cent. loss." I have seen in the same mill, bolts clogged up until they tailed over one-fourth of their stock to the low grade department of the mill, and I have said, "There goes enough good material into low grade flour and feed to 'break' this miller in six months."

You have no such millers on this side of the water I am sure, but it would be well if the intelligent European mill owner should study these points, and measure the importance of employing first-class talent to operate his mill.

The miller is a most important financial personage to his employer; he is lending out so to speak, often several hundred pounds of the mill owner's money daily, and the interest received upon it or the interest paid upon it will depend largely upon his efficiency.

Furthermore, the mill owner, in order properly to direct these "turning points" in his favor, should know every part of the mechanical operation of his mill; and he should not only know this but he should "dob" his hands up in dough frequently. It won't hurt them; the dough will wash off and the hands be whiter for the "dob,"—and probably the flour whiter too the next day, for the miller will then know that his employer has got a practical eye on him, and he will put forth every effort to excel.

There is much more that might be said upon these vital points, and upon others of almost equal importance, but I refrain from taking up more of your time.

In conclusions, I would say that there is no business that offers greater opportunities to the enterprising, or dangers to those who fail to appreciate the importance of perfection in every mechanical detail, however small. The wheat bin is like the ore-bearing rock of Colorado, which contains gold, silver and lead, and as the miner who employs the most improved machinery extracts the largest percentage of the precious metal, so the miller who intelligently avails himself of the most improved system and appliances which scientific milling has placed at his command, may confidently look for the highest results.

\*A paper read by J. Murray Case, Esq., of Columbus O., U. S. A., before the British and Irish Millers' Association held in Paris, France, Aug. 25, 1889.

## BRICKLAYING IN NORWAY.

The singular fact is mentioned that while in Great Britain building operations are suspended on the slightest approach of frost, bricklaying is carried on in Norway during almost the coldest weather that prevails for any time. Thus, in Christiania, building during the winter months, it is stated, has now been practised for at least twelve years, but more frequently during the last five, all the buildings thus erected having stood remarkably well. Experience has not shown that walls built in winter exhibit, subsequently, more dampness than those erected in summer. The reverse may be the case, since the difference between temperature of the air and of the mortar cools the latter by evaporation and takes away a great part of the moisture. According to the opinion of the principal builders in Christiania, bricklayers' work executed with due care in winter, is really superior to similar work done in summer—the whole art of such work in frosty weather consisting simply in the use of unslacked lime, the mortar prepared with which is to be made in small quantities immediately before use, the proportion of lime being increased as the thermometer falls; the only care required is to utilize the unslacked lime so handily and quickly as to enable the mortar to bind with the bricks before it cools. Another very important condition is that the bricks be always kept covered on the building site.



If you want to improve your milling, it will be worth your while to investigate the.

# NEW ERA SCALPER

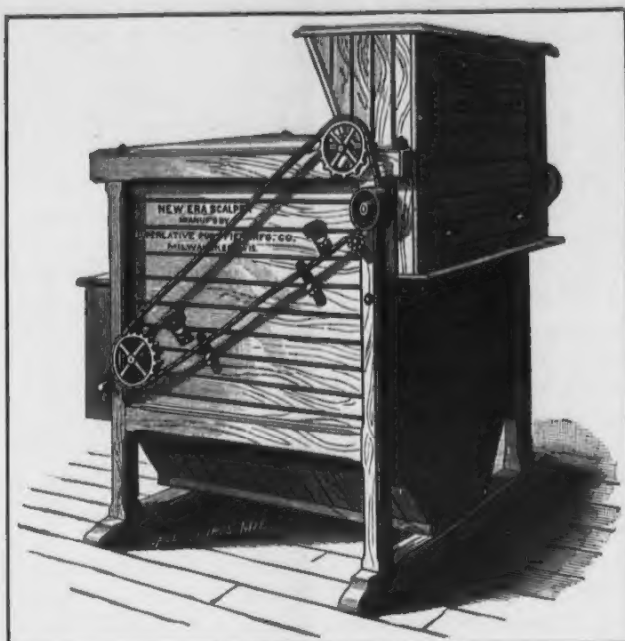
Hundreds in use in many of the best mills in the country.

\*\*\*

THEIR WORK SPEAKS FOR ITSELF.

\*\*\*

Every machine guaranteed in every respect, and trial allowed if desired.



REQUIRES SMALL SPACE AND LITTLE POWER.

\*\*\*

One machine will handle 4 breaks in 75 or 100 bbl. mill, or one break in 500 bbl. mill.

\*\*\*

The machine also does excellent work in handling Break Chop.

## A SAMPLE REPORT.

SUPERLATIVE PURIFIER MFG. CO., MILWAUKEE, WIS.:

MENASHA, WIS., July 16th, 1889.

Gentlemen—I presume you think it strange not hearing from me sooner. I have been afraid to put in your Scalper, as I was afraid it would not do the scalping for all my breaks, but have been happily disappointed, as it does the work well, and has not caused any trouble in the least. It scalpers for four breaks making three bbls. an hour, and has improved my flour a good deal. They are making a Scalper at , but don't like it as well as yours. I am trying to have put one in, and think they will do so.

If you wish any testimonials, please let me know, and I will be pleased to give you mine. I will remit payment for the Scalper in a few days.

Yours Truly,

J. H. JONES.

FOR PRICES, ETC., ADDRESS

**SUPERLATIVE PURIFIER MFG. CO.,**  
MILWAUKEE, WISCONSIN.

# VORTEX DUST COLLECTOR

(Patented January 29, 1889; March 26, 1889; May 25, 1889.)

## ✦ THE VORTEX ✦

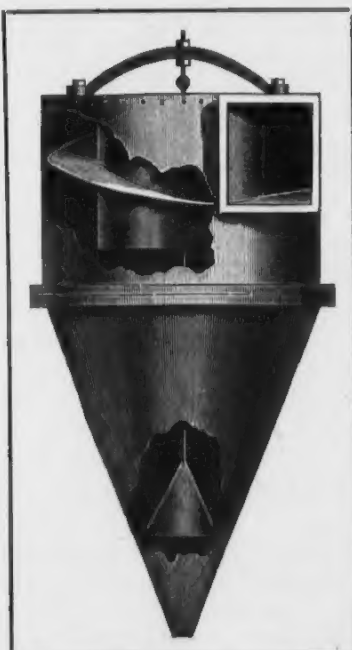
IS UNDOUBTEDLY THE

**Best · Dust · Collector**

ON THE MARKET FOR

**PURIFIERS, GRAIN CLEANERS**

AND OTHER DUST PRODUCING MACHINES.



Hundreds in Use Giving Best of Satisfaction.

**Prices Reasonable**

Machines Sold on their Merits.

We own Patents fully covering above machine, and will guarantee each and every user of same against all suits for infringement, SHOULD ANY BE BROUGHT.

PARTIES IN NEED OF DUST COLLECTORS WILL DO WELL TO WRITE US FOR CIRCULARS, ETC.

**VORTEX DUST COLLECTOR CO.**  
MILWAUKEE, WISCONSIN.



## MINOR MILLING MATTERS.\*

BY MR. J. H. MACDONNELL.

**M**R. PRESIDENT AND GENTLEMEN—The various leading subjects bearing upon the manufacturing and commercial departments, in connection with flour milling, have already been so well and ably dealt with by members of the British and Irish Millers' Association, and by others at your previous proceedings, it would be but presuming upon your time if I should select any particular one of these subjects for consideration on the present occasion. I shall therefore only touch shortly upon a few things which, in the general administration of the details of our craft, are not always kept so prominently in view as they deserve to be, feeling certain at the same time that any remarks I may have to make in this connection have been anticipated, well thought out, and put into practice by some members of this Association already.

One of the chief matters in the modern system of flour milling which up to a recent date has received but scant attention, is that of *thorough and efficient wheat cleaning*.

We all know how frequently flour mills have been remodelled and fully equipped with the most perfect rolling, purifying, and dressing machinery, while the wheat cleaning departments were never even looked into. It is also pretty well known that whereas all this outlay and labor had been spent on the mill proper, uniform good results were not always obtained, and that a change from one kind of wheat to another greatly altered the quality and value of the flour produced, the difference showing itself more pronouncedly in the "patents." In fact, impurities showed themselves in the semolina and middlings, which no amount of manipulation on the purifiers could eliminate. Millers who carefully studied the matter and made microscopical examination, found that much of the impurity was mineral matter, and in searching back found that the wheat cleaning machinery was unequal to the task of removing this matter completely. Others overlooked the cause and condemned the wheat, which, if properly and sufficiently treated, would have yielded a high-class flour.

As well as mineral matter, there is frequently found among the middlings small foreign particles of about the same size and practically the same weight as the particles of middlings, which, when rolled, become reduced to fine powder, pass through the flour dressing machines, and contaminate the flour. This is owing to the fact that some seeds about the same size and gravity as the wheat have not been extracted. I am going on the assumption that ordinary small seeds, etc., have been extracted.

In some mills one may find the inner casing of the first break rolls—and indeed of the second break also—covered with a layer of dark brown dust, proving conclusively that the wheat in those mills might be more thoroughly cleaned.

This all points to the necessity which exists for securing in the first place the most perfect arrangement possible for thoroughly cleaning and polishing the wheat berry, while extracting every particle of foreign matter, if the highest standard of flour is sought after.

The details of such an arrangement may have been thought of minor consideration by some millers, but it is on these very minor matters that the successful results of the manufacture—or the contrary—depends.

It is unnecessary for me to point out the *modus operandi* which, to my mind, presents itself as the most perfect by which to attain this thorough and efficient wheat cleaning. You have to keep in view the fact that, owing to our dependence on the markets of the world for the greater portion of our wheat supplies, the varieties of quality are numerous, and

that provision should be made to handle each and all of them to the best advantage, always remembering that the arrangement must be so comprehensive that any change of wheat containing from the least to the greatest variety of foreign matter, or varying in size from the smallest to the largest, can be dealt with in a satisfactory manner. I would impress this recommendation. Some may say, "Well, my mixtures are generally made up of such and such wheats, the impurities in which I know to be so and so, which can easily be eliminated by this or that apparatus already in the place."

That may be all very well for a year or two, until the particular wheats you depended on are not to be had, then the difficulty comes in. But, without waiting for this difficulty to arise, how often does it not happen that a cheap wheat is offered, which you know would answer your purposes very well, but you are deterred from buying it owing to the impossibility of dealing with the impurities in it with your present imperfect appliances?

Get these, then, into the most perfect and complete order that you can, if they have not already been remodelled; and when the alterations are being carried out, see that the arrangement is made with as few complicated, and what are called "combined," machines as possible, and that plenty of light and air are admitted all round, and particularly that the wheat leaving every machine is well aspirated. Have neither a fan nor a dust collector in your screen house. Let these be placed outside the mill for the greater safety of the property and the reduction of fire insurance rates.

After the wheat has been cleaned and sized, and before passing it through the automatic weighing machines preceding the first break rolls, I recommend a thorough good aspiration, so that no possibility of any dust may remain in it. If a crucial test is required to ascertain if the wheat is really clean, put a handful of it into a tumblerful of clean water, agitate for a few moments, and if the water remains clear you may be satisfied the wheat is fit to mill, but if the water becomes discolored you will understand that the wheat cleaning has been imperfectly done.

Now that rotary scalping sieves are more generally employed the first break rolls may be set to break the wheat more severely where they are used to treat the chop than where the ordinary scalping reels perform this work, and yet, although the rolls are set closer together, the quantity of break flour will be found to be less from a sieve than from a reel, the quality of the semolina better, and a larger quantity of the germ detached.

With reference to breaks, I consider the number of these might with advantage be reduced from the usual six to five, or when very dry wheat is handled, to even four.

In thus reducing the number of breaks I do not for a moment suggest the idea of reducing the granulating surface; on the contrary I should recommend that it be increased and extended to rather more than millers now employ for six or seven breaks. If rolls are employed for granulating it is advisable to have them as long as the circumstances of the situation will permit; 30in to 36in are perfectly safe to work with, and these keep cooler generally than shorter rolls. The aim should be to get the wheat or chop spread evenly along the entire length of the rolls, and only permit the feed to be one particle thick at any part of the roller surface, the object being of course to produce the broadest and cleanest bran flakes, the largest quantity of good bright semolina, and a minimum of break flour.

The feed rolls, or other feeding arrangements, have a great deal to do with the attainment of this object, and millers will learn something by experimenting

with quick feed rolls in comparison with the ordinary slow going rolls.

I have heard millers say that it is unnecessary to employ aspiration on the break rolls, but with all due respect for their opinion I think it is very much needed for several reasons.

The point to aspire from is a good deal governed by circumstances, but where these will allow I certainly think from the top of the machine is the correct place and not from the hopper beneath, or, as may be sometimes seen, from the conveyor, which takes the break meal to the elevator or the scalper. The heated air, evaporation, and light dust naturally ascend, and it is only necessary to provide a means for their escape at the top, aided by slight aspiration to get rid of these from the roller casing.

Millers are all now pretty well convinced, I think, that up to a certain point sieves are better for scalping the break products than ordinary reels. One thing, however, is frequently overlooked, whether sieves or reels are employed, and that is that the semolina and middlings leaving them and going to the purifiers are laden more or less with break flour. Nothing is more fruitful of loss than this; it is prejudicial, too, to the quality of the bulk of the flour thereafter. First the loss is considerable, as the moment the material goes on the purifiers the flour is taken up with the fluffy and fibrous matter from the middlings, and although these (fluff and fibre) may be returned to the duster, the identity of the flour is lost, it is no longer so good as at the first.

Flour in the middlings also causes an obstruction of the meshes of the purifier sieve surface, which hinders the proper working of that machine, while a part of the flour gets down with the middlings to the reduction rolls, becomes darkened in the rolling, and prevents the rolls doing good work on the middlings. Some millers may say: We knew all this well enough before, and our technically-educated purifier and machine men are quite capable of attending to such minor matters of detail. Granted; but permit me to say there is very constant supervision required, and it is not always found that the smartest milling student at the technical examination proves to be the most attentive man to mind such minor matters. It will repay you to occasionally look into these things for yourselves.

In some mills centrifugals are employed to dust the middlings, but the most gentle centrifugal has a tendency to break the middlings, and sensibly reduce the quality and quantity of the "patents." The purification of semolina and middlings is perhaps now receiving more attention than at any previous time in the history of modern milling, and no miller need be at a loss to know where he can get machines to suit his purpose; but let me again impress the fact that unless the wheat has been thoroughly cleaned to begin with, and all impurities extracted, the purification of the semolina and middlings will be unsatisfactory with even the most perfect purifier, but having the semolina and middlings absolutely pure, properly sized and correctly distributed to the reduction rolls, it will be found that their gradual reduction will be produced with greater facility and ease than under less particular treatment; the power required for reductions will be smaller. The number of the silk covers may be lowered without detriment to the color of the flour, the flour will be light and granular, and the general clean up of the offals quickly and perfectly attained.

As in the case of the granulating rolls, so with the reduction rolls, the surfaces should be long enough for the distribution of the feed to them to be as thin as possible without leaving any portion uncovered.

In conclusion, I would ask you not to look on the matter in this short paper with too critical an eye, but rather to

receive the suggestions I have made for what they are worth, and if any point is worthy of consideration think over it.

You will have noticed that I have confined my remarks to roller milling principally, but it is not unlikely that before another decade we may have to write of a different kind of milling. The details will, however, always remain about the same, and it will be to the interest of every miller to see that these are all carefully and strictly carried out at all times in order to ensure good work, satisfactory reports of the quality of the flour from his customers, a good yield of products, and a pleasing and profitable balance sheet at the finish.

\* A paper read by Mr. J. H. Macdonnell, of Stockton-on-Tees, England, before the British and Irish Millers' Association in Paris, France, Aug. 28, 1889.

## THE SAULT STE. MARIE CANAL.

BY R. E. PEARY, C. E. U. S. N.

**T**HE St. Mary Canal, which forms the outlet of Lake Superior, is unique in several respects. It is one mile long, has a depth of 16 feet, and has the largest lock in the world, 515 feet x 80 feet x 18 feet lift.

This canal was originally constructed in 1855 with two locks, each 350 feet x 70 feet by 9 feet lift. About 1870 it became evident that the capacity of the canal had been nearly reached, and the work of enlargement was undertaken. This consisted of the construction of the present lock and the deepening of the canal to 16 feet.

These improvements were completed in 1881, at a cost of about \$2,500,000, with a most astonishing result upon the traffic of the canal. The number of vessels increased and their size and draught increased to correspond with the larger water-way. The tonnage of the canal increased from 1,500,000 tons in 1881, the first year of the enlarged canal, to 4,500,000 in 1886, i. e. it trebled in five years. In 1888 the tonnage was over 5½ million tons. From 1885 to 1886 to total tonnage increased 37 per cent., and from 1887 to 1888 the average tonnage per vessel increased some 20 per cent. The annual tonnage of the canal is now very nearly as great as that of Suez, 1,685 vessels having passed through the canal in one month. In 1886 it was seen that the capacity of the canal would be reached in two or three years, its ultimate capacity being 96 vessels per day of 24 hours, and 84 having already passed in that time, and a still further enlargement was proposed and is now in progress. This will consist of a lock 800 feet x 100 feet with a depth of 21 feet on the sills and a lift of 18 feet, and the deepening of the canal to 20 feet.

The new lock is to be placed upon the site of the two old ones, and will be used with the present new one. The cost of the enlargement is estimated at \$4,738,865, and the time 5 years. If on its completion, the traffic of the canal takes such a bound upward as after the last enlargement—and there is no reason to doubt that it will—Suez, even with its enlargement completed, will have difficult work to keep pace with it.

The present lock in this canal is undoubtedly the finest, as it is the largest in the world. It is manipulated entirely by hydraulic power furnished by the fall at the lock, and the operation of hauling in, jacking, and hauling out a vessel is easily accomplished in 13 minutes. The cost per ton of passing vessels through the canal was in 1882-83 1½ to 2 cents. It is now about one-half cent.

THE Standard, Excelsior and St. Anthony flour mills of Minneapolis, Minn., have been consolidated, and hereafter will be known as the Minneapolis Flour Manufacturing Company. The interests of D. Morrison & Co. and Morse & Sammis will be made into a stock company to be known as the company named above. The incorporators are to be D. Morrison, Clinton Morrison, Samuel Morse, Thomas A. Sammis and H. B. Whetmore. The capital stock will be \$600,000. The three mills will give the company an aggregate of 3,400 barrels of flour.



## MILLING AND MECHANICAL NOTES.

(Condensed and compiled for the UNITED STATES MILLER AND MILLING ENGINEER.)

In locating a flour mill it is generally better to do so with regard to shipping and other commercial facilities than for the sake of utilizing an ordinary water-power.

When things go wrong in the mill the fault is either with the miller, the machinery or the stock. Ben. Franklin's advice, "be sure you are right and then go ahead," is good for the miller.

To do successful milling not only quality but quantity of yield must be carefully attended to and, of course the best results must be obtained in the most economical way possible.

"The most expert workmen in any trade have no difficulty in obtaining plenty of work at good wages. A master knows that such men are too scarce to lose, and they are retained at any cost within reason."—*Wm. Jago.*

An automatic damper regulator will not fire a boiler, although we notice that many engineers act as if they labored under that impression. It will check the draught at a certain pressure and thus economize fuel, but if the fireman allows his fires to run down with the damper wide open he cannot hope to obtain economical work.

If a belt is new, or has been off the pulleys for some length of time, do not try to strain it together too quick. Better be a little lazy about it. A 24-inch belt 160 feet long will stretch 8 to 12 inches the first 24 hours it is on the pulleys. Let the belt stand in the clamps a few hours, or over night if possible, and much of the stretch can be taken out at once.

It is sometimes taken for granted that every well-built engine, in good order, must of necessity, give profitable returns under any and all conditions of labor, provided only that the engine be large enough; no thought being taken that it may be too large for the work, the purchaser seeming to reason, as Pat did in declining to have his foot measured by the shoemaker, but wanted all the leather he could get for the money.

**BULGING IN BOILER PLATES.**—An authority upon the subject says that bagging or bulging of boiler plates over the fire is in nearly every case traced to the use of oil in the boiler. Oil is sometimes fed to boilers by the false economy of turning the exhaust steam into the water tank, where the engine oil is caught, and whence that oil is pumped with the water into the boiler. Oil gathers the scum and dirt into a cake, which may settle on the fire sheet and thus prevent contact with the water. The intense fire heats the iron red hot, and the pressure bulges the plate. Scale, if allowed to accumulate in large quantities, may also possibly cause bulging, but the first cause of all bulging in cylinder boiler plates may always be traced to oil.

**INSPECTING BOILERS WHILE UNDER STEAM.**—It is reported that a German scientist, Herr E. Blass, has devised an incandescent lamp arrangement by which the interior of a boiler may be inspected while the same is under steam. A thick, black tube is inserted through a stuffing box, through which a small incandescent lamp is introduced, which is connected with a battery. By means of a thick glass plate, placed in the shell of the boiler at a convenient place, the illuminated interior of the boiler may be inspected. While this appears at first sight but a scientific experiment, brought into practical shape it might prove a valuable aid in investigating the conditions of a boiler at work, and thereby be the means of providing remedies for many of the existing uncertainties in boiler manipulation.

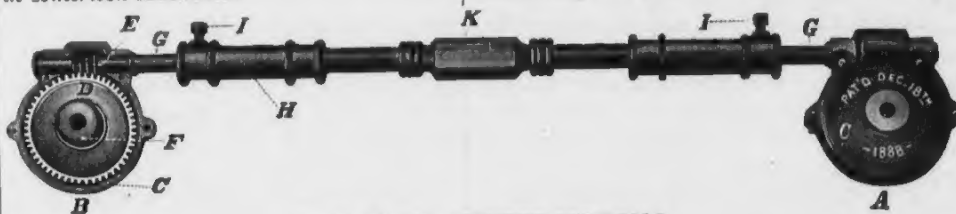
**PROF. THURSTON SAYS:** "There is sufficient storage energy stored in a plain cylinder boiler with 100 pounds pressure to

project it to a height of over three and one half miles; a two flue boiler about two and one half miles; a locomotive at 125 pounds from one half to two thirds of a mile; and a 60 h. p. return boiler at 70 pounds somewhat over a mile high."

"A cubic foot of heated water under a pressure of 60 or 70 pounds per square inch, has about the same energy as one pound of gunpowder. At a low red heat it has about forty times this amount of energy in a form to be so expanded."

"The heat which has been absorbed by one pound of water to convert it into a pound of steam at atmospheric pressure is sufficient to have melted three pounds of steel or thirteen pounds of gold."

**COLLARS ON LINE SHAFTS.**—No one is satisfied with a collar put on a line shaft with a set screw. Very few are ever put on any other way, and, when they are, no one else likes that way either. I have thought of a plan that I shall adopt when I get a chance. It is this: Have two good wrought-iron or steel collars turned and bored a shrink fit, and shrink one on the line at each end of the box next the main driving pulleys. If I ever want to get them off I will use hammer, cold chisel and sledge, and make new ones if wanted somewhere else. The collars should be at opposite ends of the same box, and not at the opposite ends of the shaft. The shafts seem to go nice when there is about 1/4" end play, and goes that quarter of an inch too, if level and it has a chance. I know collars have been welded to a shaft times enough, and collars shrunk on in place of welding; but the point I wish to make is to shrink on a collar in the place of putting it on with a set screw or some complicated arrangement.—*J. E. SWEET in American Machinist.*



THE BEYNON ADJUSTER FOR ROLLS.

CONCERNING bolting with centrifugal reels and the use of smooth rollers a writer in *The Millstone* says:

The centrifugal reel may be used in bolting nearly, if not all, of the various grades of flour stock. In order that this statement may not be misleading, it must be remembered that by flour stock is meant the material which is prepared to be bolted for the purpose of making a flour separation, that which has been scalped and the large bulk of coarse and sharp material removed from it. Flour stock may be material which has passed through a No. 7, 8, 9 or 10 cloth. After that it may be regarded as flour. The flour stock, it must be understood, is flour stock essentially—it is soft. If it is sharp it may not be altogether middlings, but it is not properly prepared for flour. The miller who keeps these points in view will not make a mistake in the use of a centrifugal reel.

The great mistake that is made in handling smooth rolls is in setting them too close, squeezing the stock, which operation is always wrong. All smooth rolls should be operated in a manner as though they were sizing rolls, and not as if they were mashing or grinding rolls. If, for any reason, the rolls are set too tight and flatten the stock, or if they have a heavy feed, there must always be a waste in the direction of the feed pile or the low-grade bin. There is a material mashed into and mingled with a superior grade of stock, which material is rated by the company which it keeps. It goes to the red-dog direct or makes rapid descent in that direction.

**LEATHER BELTS.**—In an article on the working and care of leather belts, a German paper says:—"If a belt slides on the pulley, and cannot be tightened by shortening, it must be thoroughly lubricated. Resin or resinous substances are entirely unsuitable for increasing adhesion; in fact, they are, under all circumstances, highly injurious to the leather. They are simply a makeshift, and a bad one at that as they make the leather hard and brittle. The pulley becomes dirty and uneven by the resin, and by reason of its raised places it stretches certain places in

the belt unnecessarily, and the velocity of the driven pulley becomes variable. It is advisable to wash the belts from time to time with warm water and to brush them, after which they must be lubricated upon both sides with a mixture of equal parts of tallow and train oil. If a lubrication is necessary without throwing off the belt, only the outer side must be treated. The lubricant, when used, must show a temperature of from 113 deg. to 122 deg., Fab. If the belts are not lubricated at certain regular times, they lose their elasticity, become brittle and unsuitable for work. When lubricating a belt which has become hard and dry, the above lubricating mixture must be changed by taking only one third tallow and two-thirds train oil, and applying it after the belt has been moistened. Belts which run in damp localities must, after lubricating them be rubbed in with beeswax. Belt users are specially cautioned against lubricants containing vaseline, petroleum, or other mineral 'fads,' as they are not at all suitable to be put on leather."

## THE BEYNON ADJUSTER FOR ROLLS.

THE device shown herewith is for use in connection with roller mills. In the cut, A shows an outside view; B an inside view; C the casing; D brass worm wheel; E steel worm; F hub of worm wheel; G spindle; H ferrule; I set screw; K handle. The connecting rods of the roll are fastened to the hubs F in the place of the hand wheels or other devices for adjusting. The bearings of the spindle G are elongated to admit a longitudinal movement of the handle K, so as to prevent kinking of the connecting rods, should a hard substance

pass between the rolls. This is a successful device for adjusting the movable roll of a roller mill parallel with the stationary roll by means of an adjusting handle K, and is applicable to any of the different sizes of the leading roller mills. By its use considerable time is saved in adjusting the rolls to the work, the bearings of the movable roll are prevented from heating, and it is claimed that a much better and a more even granulation of the material is secured, than can be obtained by using hand wheels or other devices. It is said that the vibration of the rolls cannot possibly cause any change in the adjustment. It is the invention of Mr. John R. Beynon, who is also the inventor of the Beynon Aspirator and the Beynon Alarm. Parties interested may correspond with Beynon & Murphy, Watertown, Wis., who are the manufacturers, and who will be pleased to answer all inquiries.



ITEMS FROM BEYOND SEAS.

The great Vienna corn fair was almost a failure. The Jews boycotted it, and consequently buyers were not half as plentiful as usual.

At a recent meeting of the Belgium Milling Association the minister of justice was petitioned to take steps toward putting a stop to the mixing of any substance foreign to cereals with the flour. The chairman read an extract from the parliamentary debates containing a statement to the effect that human bones were ground up to be mixed with flour intended for human food.

**ADULTERATED LINSEED.**—A new method of adulterating linseed cake has been disclosed by the chemical committee of the

Royal Agricultural Society of England. This consists of the admixture with the linseed before grinding, of a quantity of the refuse of saccharine factories. The presence of this adulterant is recognizable by an excessive percentage of ash, consisting largely of sulphate of lime (gypsum), a substance decidedly injurious to live stock. Several cases of adulteration in manures and feeding-stuffs, detected on analysis by the Society's chemist, are exposed, with the names of the vendors in some instances, in the report referred to.

**THE EUROPEAN WHEAT CROP.**—The following are the official conclusions of the Vienna Seed Congress on the European wheat crop in the form of percentages or conditions for the various countries. As presented in the table below, it was found necessary to make a general average of the several provinces in Russia, as well as Germany, and in that particular the results may be defective and subject to some slight modification. An apparent shortage of 124,146,509 bushels is shown, as compared with last year, and 71,527,116 bushels as compared with the average for the five preceding years. The details are as follows:

COUNTRY.	CONDITION.	1888. BUSH'LS.	CONDITION.	1889. BUSH'LS.
Austria	107	38,738,700	83	30,049,046
Hungary	110	136,871,064	72	80,688,835
Germany	90	68,112,000	88	66,806,070
Denmark	80	4,844,603	100	6,000,750
Norway	95	4,420,870	95	4,420,870
Sweden				

**FROMENTINE—A NEW WHEAT PRODUCT.**—Dr. Dujardin-Beaumez recently exhibited at the Paris Academy of Medicine a new alimentary substance, "fromentine," which is obtained from wheat by the aid of millstones. Fromentine is the embryo of wheat reduced to flour, and deprived of the oil which it contains. The substance contains three times more nitrogenous substance than meat and a strong proportion of sugar. Thus the amount of nitrogenous matter in it is 51 per cent., while that of the richest meat, mutton, is but 21 per cent., and the proportion of digestible substance reaches 87 per cent. of the total weight. Hence it would appear that it might advantageously replace powdered meat as a concentrated food. It can be used for making soups, and even for making biscuits, the taste of which would not be disagreeable. The wheat germs employed are a by-product in the Schwietzer process of manufacturing a flour which can be kept for a long time without deteriorating.

**ANOTHER FLOATING EXPOSITION.**—A monster floating exposition is reported being organized in Germany. Its object is to provide a large vessel—perhaps the largest afloat—fill it with exhibits of German industry, and send it from one port to another around the world, stopping and exhibiting where necessary. The plan of operation is thus described: The giant steamer Kaiser Wilhelm will be built at Kiel. She will be 570 feet long, 70 feet broad, and her depth will be 45 feet. She will contain eight immense exposition halls, with galleries and pavilions for separate exhibits. Passenger elevators and other conveniences will be provided. It will be a permanent institution, starting from Hamburg or Bremen every two years and touching every port of consequence in the world. The Floating Exposition Palace will exhibit exclusively the works of German manufacturers. The scheme is to bring the products of German industry directly to the notice of importers in foreign countries, and this at a small outlay. The exhibitors are asked to pay for every exposition port \$1.25 for the cubic meter space their goods occupy. The goods will be placed in such a position and so thoroughly fastened that the movements of the vessel will not disturb or damage them. They may be changed or added to in every port. The company will take upon itself to introduce them to merchants of foreign countries, or a representative of the firm exhibiting goods may accompany the freight. Passengers will be carried at low rates.



OUR BALTIMORE LETTER.

A Sparkling Communication full of interest to the Trade. Some peculiar features of the Baltimore Flour Trade explained, etc., etc.

**A** BOMBHELL thrown into the Baltimore flour market could not have produced a greater sensation than did my letter of a month ago.

The revelations which it contained caused intense excitement throughout the trade, and brought a demand for the UNITED STATES MILLER which seemed impossible to satisfy.

It is true that a few sore heads, actuated by jealousy or some motive equally honorable, denounced the letter in scathing terms, but the great bulk of our dealers not only warmly commended it, but also fully endorsed every sentiment it expressed.

The truth, you know, hurts, sometimes, and that, no doubt, is why certain ones in our midst winced and squirmed so when they saw for the first time such startling facts presented in cold type. It was a bitter pill for them to swallow, we admit, but they should hereafter learn to take their medicine in a more amiable frame of mind. It is not my desire or purpose to offend any one, but, at the same time, I want it distinctly understood that I cannot be deterred one iota, either by threats or any thing else, from doing my duty in this capacity at any cost. I shall therefore openly, fearlessly and unequivocally point out and discuss abuses existing in the trade, respectfully challenging those who may differ with me to a contradiction in these columns. With these preliminary remarks I will now pass to the subject under consideration this month, namely, the pernicious system of discounts in vogue here.

Millers throughout the country very naturally enquire from time to time why it is that they cannot obtain prices for their product in this market approximating at least those current for such brands as "Patapsco Superlative," "Snow Drop" and "Jamestown." The reason is obvious to those on the spot, but an exceedingly difficult thing for an outsider to understand. I will endeavor to explain.

The quotations of these and other local brands, which appear in the press, are simply the gross list prices to the trade, and do not represent at all the figures they are bringing in a wholesale way. For example, take "Patapsco Superlative Patent," which is quoted to-day at \$5.60 a barrel, and let us see what it is really selling for in round lots: If a dealer buys 10 barrels of this flour in the current month he is entitled to 10 cents per barrel rebate; if 15 barrels, 15 cents; if 25 barrels, 25 cents; if 100 barrels, 30 cents.

Then an additional five cents per barrel is allowed for drayage, where the buyer hauls it himself. And then again, in instances, a small percentage is deducted for cash.

A customer is not compelled either to engage these amounts in a lump in order to obtain the stated discounts, but on the contrary, he can buy a barrel at a time, and at the end of the month receive his proportion of drawbacks according to his aggregate purchases.

So then instead of "Patapsco Superlative" bringing \$5.60 a barrel as appears upon its face, it is really selling at \$5.25 to the man or combination of men who contract for 100 barrels of it a month. The same rule precisely is carried on too by the proprietors of the "Snow Drop," "Jamestown" and other leading stencils.

The system is pernicious in that it is misleading, and smacks too much of the Cheap John, Harrison street style of dealing to merit commendation.

The Baltimore flour market has ruled weak and lower since my last review, but at the decline business has revived, and at this writing considerable activity prevails. Jobbers have allowed their stocks to become reduced to the minimum, but are now taking advantage of current rates to augment them. Standard St. Louis patents are held at 4.90, with sales at slight concessions from these figures. Straights from the same point, however, are less exorbitant, going in instances as low as \$4.25.

Ohio, Indiana and Illinois mills are less pretentious in their views, and are consequently getting the bulk of the winter wheat orders. Patents from these localities range from \$4.60 to 4.85; straights from \$4.10 to \$4.25; and clears \$3.90 to 4.20.

The product of near by mills however, while inferior to that of the West, is selling correspondingly. Many of our dealers will invariably buy a low-priced article, irrespective of quality, in preference to a relatively cheaper one. These gentlemen have a wonderfully accommodating constituency, that will take any thing that they see fit to give it. It has been educated that way. The prices for such qualities range from \$4.50 to \$4.70 for Patents; \$4.00 to \$4.20 for straights; and \$3.80 to \$4.00 for clears.

The grades most in demand here at the moment are fancy patents at \$4.75; straights

at \$4.30; clears at \$4.00; and extras at \$3.75. They must be exceptionally choice, however, to command these figures.

Little or nothing is being done in low grades at the moment. Spring wheat patents have had a big tumble within a month. Those from the new product have made their appearance and have caused the break in prices. The quality of the new, promises to far surpass that of the old, but most of our dealers are afraid to use that of the former exclusively until it has become more thoroughly seasoned. The consequence is that old wheat patents are in request now at a premium over the new, but are becoming exceedingly scarce, notwithstanding. Some large sales of Minneapolis old wheat patents have been effected here recently at \$5.15 a barrel.

Country mills are offering those from the new as low as \$4.75, with sales at that figure. Standard Minneapolis brands however, are generally held at \$5.00, but nothing can be done with them here while just as good can be bought for less money. The woods are full of spring wheat patents, and at all kinds of prices, but it is safe to quote the range of the new and old from \$4.75 to \$5.15.

A cross-roads mill is selling patent here in sacks at \$4.60, for which it wants \$4.90 in wood. A difference greater than is usually allowed.

Spring bakers' have been in active demand, and some heavy business has been transacted in them at about \$3.65 for standard brands. Quotations for the new and old range from \$3.25 to \$3.65.

City mills report trade as very slack, especially those making Rio flour exclusively. There is nothing whatever doing here for export.

The estimated stock of flour in Baltimore to-day, in round numbers, and exclusive of that held by city mills, is 45,000 barrels. I quote the range of the flour market, as follows:

Western Winter Wheat Super.....	\$2.50	@ \$2.75
" " " Extra.....	3.00	@ 3.75
" " " Family.....	4.00	@ 4.50
Winter Wheat Patent.....	4.50	@ 4.90
Spring " " ".....	4.75	@ 5.15
" " " Straight.....	4.00	@ 4.75
" " " Bakers.....	3.25	@ 3.65
Baltimore Best Patent.....	5.00	@
" " Choice.....	5.45	@
" " High Grade Family.....	5.35	@
" " Choice " Extra.....	5.10	@
Maryland, Virginia and Penna. Super.....	2.50	@ 2.75
" " " Extra.....	3.00	@ 3.75
" " " Family.....	4.00	@ 4.50
City Mills Super.....	2.25	@ 2.50
" (Rio Brands Extra).....	4.40	@ 4.62 1/2
Rye Flour.....	2.75	@ 3.00

The wheat market has been in a deplorable condition for some time past.

Values have rapidly declined until cash wheat in Baltimore has ruled 6 cents per bush, below the figures current in New York for the same thing.

It is not because of a glut, for there is only about 400,000 bushels of contract wheat in the elevators. Neither is it because of the poor quality of our grade, for it takes a mighty good article now to pass the standard. Well, what is it then that keeps us so much below the other markets of the country?

Without mincing matters I will tell you. It is the pure "cussedness" of our traders, and nothing more. They are all bears, with hardly an exception, and, consequently are short up to the neck all the time. They kick and pound this market out of shape, hoping thereby to influence values elsewhere. It is positively alarming to witness their audacity.

It is their old game, though, and yet they have the gall to ask for lower freight rates from the west on grain!

A market unable to obtain within 6 cents per bushel of what her rival is getting should have no rates at all.

Many of the men who operate in grain here sell on every rally, and then sit round like bumps on a log until the deal shows a profit, when they take it in, and squat again, preparatory for another "flyer." These "scalpers" are generally successful fellows, and most always operate on the bear side.

The receipts of southern wheat have fallen off to almost nothing while the condition continues equally as poor.

Every body here expects a big movement in wheat all over the country shortly, and also anticipates its going at low figures.

This sentiment is too general to be verified, however.

I am rather skeptical about that movement panning out the way it is being pictured to us. There is too much anxiety for it to be so to suit me.

I invariably believe in coppering one sided opinions like that. Owing to the scarcity and firmness of ocean tonnage, very few clearances have been made, but every indication points to a good business in the near future.

Millers experience great difficulty in obtaining proper selections for immediate grinding, and are now turning their attention westward for supplies.

The extreme range of prices to-day for sample wheat was 40 @ 85 cents all as to condition.

STOCK OF GRAIN IN ELEVATORS THIS DAY:

CORN.		WHEAT.	
1 White.....	1,490	2 Red winter.....	405,850
2 ".....	138,443	3 Strm. 2 red winter.....	91,393
Yellow.....	2,624	4 " winter.....	497
Mixed.....	301,558	Mixed.....	774
Steamer White.....	4,123	Special Bin.....	457,722
" mixed.....	2,306	Total.....	901,022
Special Bin.....	16,751	" 1888.....	1,205,201
Total.....	514,343	OATS.	
" 1888.....	54,485	2 White.....	8,305
Rye.....	12,672	2 Mixed.....	1,000
		Special Bin.....	117,813
		Total.....	127,127

CLOSING AND COMPARATIVE PRICES.

Wheat.	Closing	Same time last year.
No. 2 Red.....	78 1/2 @ 78 3/4	94 @ 94 1/4
Spot.....	78 1/2 @ 78 3/4	94 @ 94 1/4
September.....	78 1/2 @ 78 3/4	95 @ 95 1/4
October.....	78 1/2 @ 78 3/4	95 @ 95 1/4
December.....	78 1/2 @ 78 3/4	95 @ 95 1/4
Steamer 2.....	77 @ 77 1/2	95 @ 95 1/4
Fultz.....	70 @ 70 1/2	100 @ 100 1/2
Longberry.....	75 @ 75 1/2	100 @ 100 1/2

CLOSING AND COMPARATIVE PRICES.

Corn.	Closing	Same time last year.
Mixed.....	40 1/2 @ 40 3/4	54 @
Spot.....	40 1/2 @ 40 3/4	55 @
September.....	40 1/2 @ 40 3/4	55 @
October.....	40 1/2 @ 40 3/4	56 1/2 @ 57
Year.....	39 1/2 @ 40 1/2	@
Steamer.....	40 @ 40 1/2	55 @ 55 1/2
White.....	40 @ 40 1/2	55 @ 55 1/2
Yellow.....	40 @ 40 1/2	55 @ 55 1/2

ITEMS OF INTEREST TO THE TRADE.

The Baltimore Corn & Flour Exchange closed its rooms on the 9th and 12th of Sept. to give members a chance to enjoy Exposition ceremonies.

Robt. A. Galt, millers' agent of Baltimore has returned from a brief visit to Minneapolis and Duluth.

Harry A. Belt, millers' agent of this city, has returned from a visit to Virginia.

Andrew J. Palmer, of Wilson, Palmer & Co., wholesale flour and grocery dealers of this city, is back to his post again, after a most delightful visit to the White Sulphur Springs.

Among the floats in the trades display last Monday, none were more unique and attractive than those of the C. A. Gambrill Mfg. Co., E. N. Gardner & Co., Peter New & Co., and Rinehart, Childs & Co.

The special edition of the *Baltimore Journal of Commerce* is a very handsome affair indeed, and reflects great credit upon editor Shannon.

Gen. John Gill, formerly head of the firm of Gill & Fisher of this city, has returned to Europe where he will meet his family and spend sometime in continental travel.

Harry A. Wroth, statistician of the Corn & Flour Exchange has returned from his Eastern Shore trip.

Edward J. Snow carries his 60 years remarkably well.

James Knox of New York, formerly a leading grain exporter of Baltimore paid us a brief visit last week.

Conrad Ruhl, Sr., is gradually giving up his flour business to his boys Henry and Conrad, Jr.

L. Sinsheimer is improving every day from his recent European voyage.

Peter New & Sons, wholesale flour and grocery dealers of Baltimore, are about the busiest merchants we have at present.

John F. Blake, miller of Canton, Ohio, was on change yesterday for a while. He is about to establish an agent here.

President Wm. F. Wheatley is very much elated over the success of his journal.

J. Olney Norris, proprietor of the Monitor mill of Baltimore, has embarked on a voyage around the world and expects to be gone a year.

The C. A. Gambrill Mfg. Co., is refusing offers daily for their celebrated "Chesapeake" flour which would make competitors in the Rio trade turn green with envy did they but know them.

Baltimore, Sept. 12, 1889.

HERVEY BATES, who is operating the Indianapolis, Ind., hominy mills, has filed a complaint with the interstate railway commission, charging discrimination by the Pennsylvania Railroad Company against his business. The complaint says the defendants now charge as freight on corn from Indianapolis to New York City 18 1/2 cents for 100 pounds weight, at the same time charging and collecting as freight on ground corn, cracked corn and corn meal, grits, hominy and refuse at the rate of 23 cents per 100 pounds, thereby affording a direct advantage to the miller at the East of 4 1/2 cents per 100 pounds, and placing upon the complainant a consequent loss.

HALF RATE HARVEST EXCURSIONS.

Will leave Chicago and Milwaukee, via the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY for points in Northern Iowa, Minnesota, South and North Dakota, Montana, Colorado, Kansas and Nebraska, on August 6 and 20, September 10 and 24, and October 8, 1889. Tickets good for return passage within 30 days from date of sale.

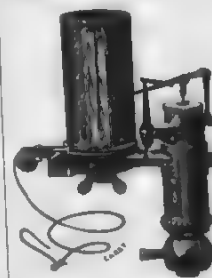
For further information, circulars showing rates of fare, maps, etc., address A. V. H. CARPENTER, General Passenger Agent, Milwaukee, Wis.

American Steam Gauge Co.,

—SOLE MANUFACTURERS—

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WITH LANE'S IMPROVEMENT.



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Send for Catalogue K.

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MILL AND ELEVATOR BUILDERS, MILL FURNISHERS, MANUFACTURERS OF AND DEALERS IN MILL AND ELEVATOR MACHINERY AND SUPPLIES.

Cards will be inserted under this heading in the "U. S. Miller," not exceeding three lines, copy of paper included, for FIVE DOLLARS per year, cash with order. Additional lines, \$1.00 each, per year.

Edw. P. Allis & Co., Milwaukee, Wis., builders of complete Flour Mills, manufacturers of Flour Mill Machinery, and dealers in Supplies of every description. [Mr. 89.]

O. C. Ritter, Sta. A., Springfield, Mo., Patentee and Designer, Ritter's One Reduction Milling System. Full Roller Plants for small mills. [Aug. 10]

John C. Higgins & Son, 165 West Kinzie Street, Chicago, Ill., mfrs. of and dressers of Mill Picks. [Mr. 89.]

Robert Poole & Son Co., Baltimore, Md., manufacturers of Steam Engines, Water Wheels, Flour, Corn, Paper, Saw and Cotton Mill Machinery.

B. H. & J. Sanford, Phoenix Iron Works, Sheboygan, Falls, Wis., manufacturers of the "IMPROVED WALSH DOUBLE TURBINE WATER WHEEL." [Mr. 89.]

John C. Kliner, York Foundry and Engine Works, York, Neb., Mill and Elevator machinery of all kinds, Engines, Boilers, Pulleys, Shafting, etc. [Mr. 89.]

The Gutta Percha and Rubber Mfg. Co., 159-161 Lake St., Chicago, Ill., Belting and Rubber Goods. [Mr. 89.]

Richmond Mfg. Co., Lockport, N. Y., manufacturers of Grain Cleaning Machinery, Bran Dusters, etc. [89. Mr.]

N. Y. Belting and Packing Co., N. Y. Leather Belting Co., W. D. Allen & Co., Agents, 151 Lake Street, Chicago. [Apr. 89.]

W. G. Avery Mfg. Co., 10 Vincent St., Cleveland, O., Specialties: Avery Lever Belt Patches, Avery Seamless Elevator Buckets, Belting, Elevator Bolts, etc. [May 89.]

The H. J. Deal Specialty Co., Bucyrus, Ohio. Headquarters for Flour and Grain Testing Appliances, and Specialties for the Milling, Flour and Grain trades. [May 89]

A. B. Bowman, 223 Second St., St. Louis, Mo., manufacturers of Wheat Heaters.

Sprague Electric Railway & Motor Co., 16 and 18 Broad St., New York. Electric Motors. Electric Transmission of Power.

Stillwell & Pierce Mfg. Co., Dayton Ohio. Mill Builders, Manufacturers of and dealers in Water Wheels, Feed Water Heaters and Flour Mill Machinery and Supplies.

Milwaukee Bag Co., No. 236 East Water St., Milwaukee, Wis., manufacturers of plain and printed Flour and Grain Sacks of all kinds.

B. F. Ryer, 66 S. Canal St., Chicago. Mill Furnisher. Bolting Cloths made to order.

Jas. Leffel & Co., Springfield, Ohio. Water Wheels.

Vacuum Oil Co., Rochester, N. Y. Oils.

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1888-9 Edition, issued March, 1888.

PRICE, \$10 PER COPY, sent paid and registered to any part of the world. Address,

E. HARRISON CAWKER, Milwaukee, Wis.



## OUR ENGLISH LETTER.

(From our men Correspondent.)

LONDON, Sept. 3, 1889.

The wheat which was gathered in during the first three weeks of the month of August will not be fit for threshing until Christmas. This is due to the unsettled weather that has prevailed. The rainfall has been excessive; the winds and gales have been of equinoctial violence. The temperature has been below the average 49 degrees, by accumulation, being lost on the month, and the mean daily temperature being only a small fraction of a degree over 59 degrees at a station when the August average in twenty-five years has been 61 degrees. The light has been uncertain, the nights damp and chilly. The climax of misfortune was reached during the week ending August 24, when probably about half the corn in the country was standing in shocks, or being in swaths in the fields, while the rain poured down day after day. The wheat sheaves were soaked through over and over again. We have had during the past few days a great improvement in the weather, with the result that the scared and harassed wheat growers of the United Kingdom are now pulling themselves together, on the one hand to secure the large quantities of wheat still unharvested, and on the other to form some estimate of the damage done. It is somewhat curious, too, that with all the unsettled weather the market of the United Kingdom has been motionless during the past month, decline and advance meeting with equal resistance. A quantity of American flour which has been warehoused outside the Docks has been sold during the past week at a slight advance, and a quantity of English country flour has helped to make the Mark Lane market steady. There can be little doubt that if the Dock laborers' strike had not occurred, the prices of wheat and flour on Mark Lane market would be at this moment a shilling less. The great Dock strike has not lasted twenty-two days, and the laborers are still agitating for 6d in place of 5d an hour for ordinary time, a certainty of four hours' employment per day when engaged, the abolition of all contract work, which would mean that the Dock companies would be compelled to engage a number of foremen and overseers at permanent wages, and the division of what is termed the "plus" earned when a vessel is cleared in less than the stipulated time, in equal shares among men and foremen. To all these terms the Dock directors are willing to agree, except in so far as the extra penny is concerned, and so there is no prospect yet of a settlement. In the meantime the business of this great port is in a condition of complete stagnation. Thousands of quarters of wheat are lying in the vessels in the river, almost within touch of the flour mills, and yet not a kernel can be had to replenish the stock of foreign grain that is running short in nearly every large mill. Three mills, which together grind over two sacks of flour of 280 pounds each, per hour, are shut down, and by Thursday next, if wheat cannot be got from the river, more than half the mills in London will have to close down. Unfortunately for the London millers, the dissatisfaction is spreading among their own men in the mills. For example, Messrs. J. & H. Robinson, who carry on a milling business at Deptford-bridge mills, employ about forty hands, all badly paid, according to trade rates, the majority earning about 21s a week. All of them, except eight, signed, in the form of a "round robin," the following humble petition to the firm:

"We, the undersigned, in your employ, do humbly beg of you for an increase of wages, namely, 2s per week. Waiting for your reply, we remain your humble servants."

The reply of the firm was: "No alteration in wages can be made at present," and written at the foot of the petition was this sentence: "Tell the men whose names are marked out, that we shall not want them after to-night." Twelve names were scored through. They have not yet been discharged. They remain on at a minutes' notice.

As nearly as can be estimated, the Royal Agricultural Society loses from £5,000 to £6,000 by the Windsor show, owing to the enormous expenses of that historic gathering. Against this disaster may be set the increase of 2,752 in the membership, due to the *clat* of the jubilee year of the Queen's presidency. The total number of governors and members is now 11,231. The announcement that the fifty-first meeting will be held at Plymouth next year has been already made.

Mr. Henry William Neville, who for more than half a century was a master baker, died on Sunday, August 18th, at Ramsgate. Like many other men, who afterwards attained to wealth, Mr. Neville made a false start in life, for his first venture ended in bankruptcy. He tried it again and soon became wealthy.

He then invited each of the creditors he had been obliged to pay but partially, to come to a dinner. Each guest found under his cover a cheque for the balance due, with the interest up to date. Mr. Neville is said to have been offered and to have refused £800,000 for his business a short time before his death. The late Mr. Neville established in the northern, eastern, western and southern districts of London respectively a bread factory of practically unlimited capacity. These great establishments, taking one year with another, consumed on an average over three thousand sacks of flour per week.

The International Congress of Millers in Paris is now a thing of the past and from what I hear from a miller who was fortunate enough to be present everything seems to have passed off very satisfactory. At the first meeting in the British Section Mr. R. H. Appleton was elected President of the National Association of British and Irish Millers for the ensuing year. In the afternoon of the first day Mr. Carnot, the President of the French Republic, visited the congress. On the second day three papers were read at the English meeting. The first was by Mr. Frank Ashby, entitled "Observations on the color of Wheat flour considered from the standpoint of the manufacturer and the merchant." The second paper was contributed by Mr. Henry Macdonnell on "Minor Milling Matters" and the third was by Mr. J. Murray Case, entitled "Turning Points in Scientific Milling." The third day was given up to an International meet, at which the gold medal for Technical Education was awarded by the National Association of British and Irish Millers to R. W. Voller, of Gloucester. Medals were also distributed by the French Millers' Association to four of their journeymen millers for long service and good conduct. In the evening the Congress was brought to a close by a superb banquet. M. Yoes Guyot, Minister of Public Works, presided, having on his right Mr. Appleton and on his left the ostensible author of the felicitous phrase "La Republique Aimable" M. Dubray. After the desert M. Guyot spoke in eloquent terms of the millers and their mills. "If all these buildings were pulled down," said M. Guyot, "Humanity would be in a sad plight. Here in France our 3,000 millers would suffice for the alimentation of the whole country, and in the name of all those who eat bread I drink to their preservation and their health! Let me also drink to practical utility!" The toasts were received with International applause, the Anglo-Saxon acclamation, or as the French call the "Hourras" predominating in sonority above the *Vivats* of the French, Belgians, Spanish, Roumanians and Italians. The toast of the English millers was then given by a French miller in very good English and not one miller of the whole 100 present could reply to that toast in French much to the disgust and humiliation of my informant who is a miller and was also present. After the banquet the millers with their partners footed it beautifully on the first floor of the Palace de l'Industrie to the sound of a Waldteufel orchestra, and nobody proceeded home until the morning star was due.

A London Bread Union is being formed, and will shortly appear as a limited company. The undertaking so far as the metropolis is concerned, will be arranged similar to the "Salt Union," nearly 300 of the bakeries controlled by the Association of Master Bakers in each district having been absorbed in the scheme, and whose net profits run not far short of £100,000 per annum, which, of course, under one management, would be greatly augmented, while the combination would help to maintain a remuneration price. In my next letter I shall be able to tell you more of this scheme.

I must not close this letter without giving a few details of what the condition of wheat is supposed to be like in the various countries. A quantitative estimate for the world is altogether premature at present. What is known of the general character of the harvest renders it almost certain that the world's wheat crop is smaller than that of last year. The list of recent reports is now a pretty full one, and the gist of them may be given as follows:—Russia, very poor; Roumania, deficient; Bulgaria, moderate; Montenegro, a failure; Austria and Hungary, bad; Ger-

many and Italy, below average; Denmark, much below average; Holland, below average; Belgium, about an average; France, Spain and Portugal, above average; the United Kingdom, slightly above average, though probably only a bare average of marketable grain after the recent wet weather; the United States, a good crop; Canada, about an average; South America, very deficient; India, below average. The countries which have wheat crops better than those of last year are France, Spain, the United Kingdom, possibly Belgium and Italy, the United States and possibly Canada; while those which have worse crops are Russia, Roumania, Montenegro, Austria, Hungary, Germany, probably Holland, South America and India.

L. MAYGROVE.

## A NEW ELEVATOR BOOT.

IN many establishments, such as grain elevators, malt houses, cotton-seed mills, etc., etc., the location of elevator boots is such as to make them difficult to get at and more difficult to oil than any other part of the machinery. Sand, dust, grit and fibre surround-



FIG. 1.

ing these boxes on outside of boot would contaminate the oil, cutting the journal bearings so as to cause the pulley to wobble, throwing the belt to one side thus often ruining the belt and sometimes causing fire. The usual plan of constructing elevator boots has been essentially wrong. The pulley is generally fastened on the shaft in boot by set-

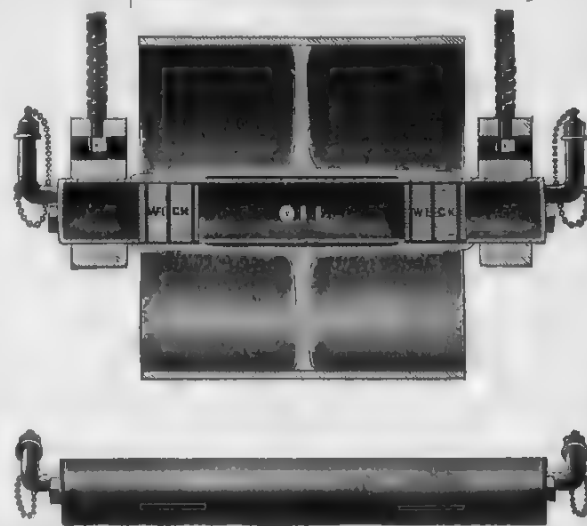


FIG. 2.

screws or key-seat, and the outer ends run in babbitted boxes, subject to the troubles above named. H. W. Caldwell, 131 and 133 West Washington Street, Chicago, has had thirteen years' experience in elevator work, and has now invented a newly constructed elevator boot that meets with the universal approval of all elevator users. The construction is shown by cuts. The shaft is hollow and preferably brass; it is held stationary; the pulley has a long hub, the hub being longer than the face of pulley; the pulley revolves on the shaft; the cylinder is filled with oil; slots are cut in the brass cylinder where the hub has bearing; in these slots fits tightly a heavy cotton wick, made of cotton belting, and the oil is fed through this wick to the revolving hub. The pulley hub is chambered out so as not to touch the shaft except at bearings. This reservoir holds sufficient oil to run three to six months, and no

sand, grit or fibre can get to the bearings. The pulley is adjustable up and down by means of hand screws, as other ordinary boots are. These boots are also so constructed that the ends can easily be removed in case of accident, and hand holes are so arranged that if there is a choke up they will lift out of place easily. These boots are meeting a very ready sale, as prices are but little more than the old style, troublesome boot.

## MILWAUKEE ITEMS.

THE MILWAUKEE BAG COMPANY has built up a great business in its line which reaches all over the North-western, Central, Western and Southern States. They are crowded with orders and have established a reputation for square dealing and promptness which has commanded success.

THE representatives of the Three Americas, who will visit Milwaukee on the 23d of next month, will be given a proper reception and afforded an opportunity to see some of the many things which Milwaukee possesses. The occasion will probably wind up with a Plankinton House banquet.

THE 23d Grand Army Re-union in this city passed off successfully in every sense of the word. The lowest estimate is that 162,000 visitors were brought here by the railroad and steamboat lines. The Naval Battle was pronounced *grand* by all but a portion of the spectators whose view was spoiled by clouds of smoke.

MILWAUKEE mills have been doing a fair trade during the past month, but have not been crowding production. The Jupiter Mills are not yet ready to start up. The Phoenix is temporarily shut down, owing to a breakage of the engine. Very soon, however, it is probable that all the mills will be running full time.

THE WISCONSIN STATE FAIR opens Sept. 16 and closes Sept. 20. Several acres of machinery will be kept in motion by ponderous engines. The mammoth exhibition building will be filled with the latest purchases of Milwaukee merchants, by the handiwork of women, the life-like pictures and charming landscapes of the artist's brush and pencil. The rarest flowers, the choicest fruits, the housewife's snow-white bread and toothsome cakes and jellies. The farmer, gardener and dairyman will exhibit the result of their winter's thought and summer's work. The greatest potato man of America (Harrington of Delavan,) will be there, exhibiting between seven and eight hundred varieties of potatoes and explaining how best to grow them.

## MISSISSIPPI STEAMBOAT INTERESTS.

The statement was made by our river editor a day or two ago that steam navigation now in the great river of America extended in the main stream alone for the enormous length of 4,429 miles. That is, that a steamboat had gone above Fort Benton to the Great Falls of the Missouri, 3150 miles above the mouth of the river and 4429 miles above the heads of the Mississippi Passes. We are glad to be able to say that the Mississippi steamboat interests and river commerce generally have been looking up considerably this year; that they have done better than for seven or eight years. There are false prophets who have said that the railroad lines of the country would kill the steamboat and barge interest of the Mississippi River. They will never kill the passenger travel or the freight transportation of the Mississippi as long as steamboat owners build fine, fast and safe passenger boats, and as long as cheap freight rates can be had by river, which will be as long as the great river flows on down from the mountains to the sea. Comparative safety to travel and cheapness of freight may in the early future lead to a modification in the construction of both passenger and freight boats and their division into separate classes as far as possible. We do not think the day of the most famous passenger steamer of the Mississippi is yet over. In fact, we do not consider that it has yet arrived.—"New Orleans Times Democrat."



## WHY WE BUY AMERICAN FLOUR.

BY W. A. THOMS.

WHY buy American flour? you ask in July issue, and suggest bakers should substitute Hungarian flour, which is cheap, for spring American patent, which is dear. While that was so when you wrote, it is not so now; adverse crop reports have sent Hungarian up several shillings per sack, while the near prospect of a good harvest in America has taken some shillings a sack off, with still lower offers for forward delivery. The high price of U. S. spring patents is, or rather was, due to exceptional circumstances that are not likely to recur, such as a damaged and short harvest of spring wheat last year, and the cornering of the most of that kind of wheat that was fit for milling by Minneapolis millers and speculators. The speculation has not been encouraging or profitable, and the "cyclone" in prices of flour and wheat, so confidently predicted by the leading cornering bulls, is as yet unfulfilled. Comparatively little spring patent has been sold at the high prices asked for it. Immense quantities were purchased last year, before and during the rise in price, by bakers, millers, and flour agents and importers. The importers stored their purchases as they arrived to await expected higher prices, while the bakers used up their purchases sparingly. When the bakers required more of the same kind they did not take the dear stored importers' flour, but Russian spring patents, or patents from gristed wheats, local milled, or American winter patents, and Hungarian—all much cheaper. The importers' flour stored at the end of last year, and offered at 42s. and 42s. 6d. per sack, is now being pressed on bakers at 35s. and under, and nothing save widespread disaster to the unharvested wheat will prevent spring patents being sold in a short time under 30s. per sack. These patents are a small proportion of the flour we receive from America, and we use them for the bulk and pile they give to loaf bread. Hungarian can only to a limited extent replace them, owing to the low volume and inferior pile it causes. Hard U. S. winter and Russian are better, and largely used, while they are cheaper than Hungarian, and generally quite as strong. With the fall in price of Hungarian there has also been a decided fall off in quality, and, save from a few mills, a fall off in strength. It is more largely composed of soft wheat than it used to be. Hungarian and spring patents are used for fancy and first quality of breads, and these bear, after all, a low proportion of the total bread required—not over one-fifth. The other four-fifths is composed of straight and bakers' grades, and our imports of American flour this year have been almost exclusively confined to these grades of spring and winter. Their price has been reasonable, though the quality has only been fair. As only from a very few of our own millers can we get these grades and varieties of flour separate, or, when we do get them, of so good value as the American, and further, as we do not have these kinds and grades from Hungary, that is why we buy American flour. We like it, find it good value, and cannot at present buy similar kinds and grades elsewhere.

As to the best methods of manipulating Hungarian flours, the difficulty with bakers is not there, but in the price obtained for the four-fifths of loaf bread, which must be composed of medium and inferior grades of cheap flour. Hungarian, cheap as it is, is relatively dear compared with these. Bakers generally are aware that Hungarian is a doughing flour from winter wheat—that it must not be used in a sponge taken on the second turn, but may be used in half, quarter, or whole sponges taken on the first turn when sufficient yeast is used to work them off rapidly, or in doughing direct, and the proportions used vary from one-

fourth to one-half of the total flour; if for crusty or pan bread, one-half may be used or even three-fourths. If for close-packed crumby, not more than one third is desired.—*The British and Foreign Confectioner.*

## TRADE NOTES.

We have received from Messrs. Thornburg & Glessner of Chicago, a copy of their new catalogue. It is well executed and deserves a place in the files of every miller and millwright.

F. W. HOWELL of Buffalo, N. Y., announces that he will continue the business of Hodges & Howell, and will furnish new cockle machines or repairs to old ones.

THE H. J. DEAL SPECIALTY CO., of Bucyrus, O., quite overwhelm us with a list of names of parties using H. J. Deal's Clipper Baking Test and Deal's Standard Improved Grain Tester. This list shows a great many names of the most prominent milling and grain elevator firms in this country and quite a number from abroad. We are pleased to note that this firm is doing such a prosperous business.

GOODYEAR RUBBER CO., 372 and 374 East Water St., Milwaukee, are making a specialty of Belting of all kinds and mill supplies. They are exclusive agents for Schieren & Co.'s Electric, Perforated Planer, Extra Short Lap and Standard Oak Tanned Leather Belting. There are places where these special belts will do better service than anything else made. They also have a full stock of their celebrated Gold Seal Rubber Belt which is as good as anything can be made of rubber, and Packing of all kinds. They are also paying special attention to Hose and carry a complete stock of their Gold Seal, Extra and Standard grades in all sizes. There is nothing in the rubber goods line which this company cannot furnish and the prices in Milwaukee are the same as made in New York.

## MEETING OF THE ARMY OF THE CUMBERLAND AT CHATTANOOGA.

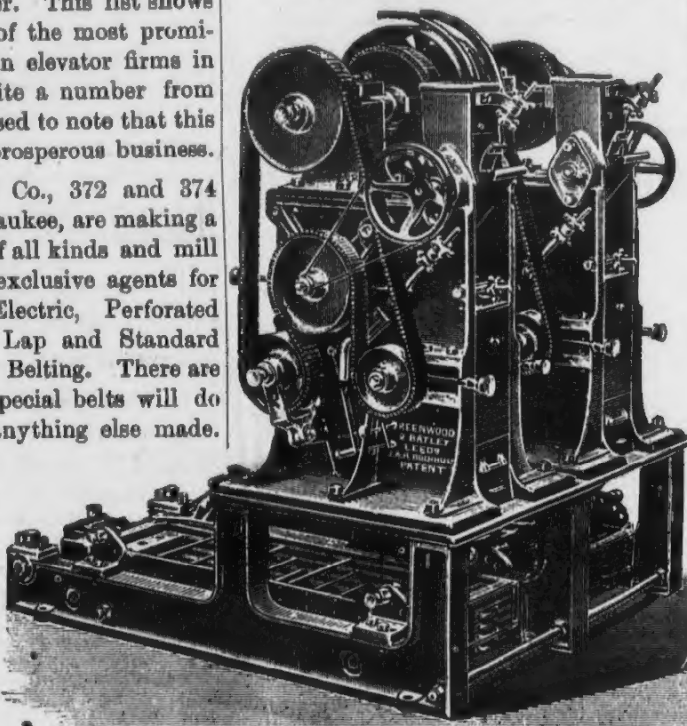
For meeting of the Army of the Cumberland at Chattanooga, September 18th and 19th rate of one fare for round trip \$9.75, will be made from Cincinnati, tickets sold Sept. 12th to 18th, good for return to Oct. 10th, via the Queen and Crescent Route. This is one of the grandest scenic lines on the continent, passing as it does through the beautiful blue grass region of Kentucky, crossing the famous High Bridge, which spans the Kentucky River at an elevation of 285 feet above the channel, passing through the pretty towns of Lexington, Danville, Nicholasville and the fruit counties of Lincoln and Puaski. In the mountains at Point Burnside where the line crosses the Cumberland River, the scene is one of picturesque grandeur beyond description. This is the only direct line running entire trains through without change. Three Express Trains daily leave Central Union Depot, Cincinnati.

## COMBINED ROLLER MILLS AND SIEVE SCALPER.

HAVING long since become aware of the encroachment upon their business which is threatened as a result of sharp competition abroad, and especially from this country, the English millers have sought the most effective remedy, to wit, the improvement of their own mills and milling methods. One of the establishments which has become noted for its enterprise in the construction of improved flour-mill machinery is that of Messrs. Greenwood & Batley, Limited, proprietors of the Albion Works at Leeds; and in the accompanying engraving is shown one of their recently designed machines, in which a sieve scalper is combined with the break rolls for small mills, where space is of great importance. The "Compactum" roller mill (Buchholz's patent) is the one here employed. The illustration, which is reproduced from *The Miller*, represents a combination of two roller mills on an iron frame, with two scalp-ers below. The scalper consists of a series of trays set on an ascending incline in a

strong frame, and worked by an eccentric shaft and check-lever. As the product from the roller mill falls on the silk the forward stroke throws it up and forwards, and at the succeeding stroke the falling meal meets the sieve at right angles and the fine particles are driven through the silk. In each of the roller mills shown in the illustration there are two rolls. The bearings of the bottom roll are adjustable, and the bearings of the top roll are fixed. A lever working on an adjustable ball and socket bearing carries an idle pulley on either end. A shaft fixed on the top of the frame of the machine, on which is fixed the driving pulley with a pulley at either end, completes the motive power, which is communicated to the pulley on the rolls by link belting, as shown in the illustration.

The two belts on each side of the roller mill are so arranged that as they pass round the idle pulleys on the balanced lever, any



COMBINED ROLLER MILLS AND SIEVE SCALPER.

undue strain coming on one side is immediately taken up by the other, thus securing the same pressure on both ends of the roll. These belts are tightened by means of a hand-wheel and screw, which communicate with the ball and socket bearing of the lever, raising it, or vice versa. By an unique arrangement, the distance between the rolls can, it is said, be adjusted to such a nicety that each division of the wheel represents one three-thousandth of an inch movement between the rolls. By this adjusting arrangement each end of the roll can be moved closer or vice versa, and when once the equal distance at each end has been obtained, both ends of the roll can be put into gear with the adjusting shaft, so that the one movement of the adjusting arrangement moves both ends of the rolls at once and to the same extent.

GEO. RUBRIGHT, a farmer, near Greensburg, Pa., went into his barn and got stung by a hornet. Discovering the nest he concluded to take revenge upon the pestiferous insects and proceeded to burn the nest. He not only succeeded in burning the hornets nest but his barn, containing his entire harvest valued at \$3000.

Moral—Never monkey with a hornets nest.

## RECENT PUBLICATIONS.

"HINTS ON HOUSEBUILDING" is the title of a neat little book issued by the Practical Publishing Co., Room 49, No. 21, Park Row, New York City. Price 50 cents.

"UNPARDONABLE SIN" is the title of a new and exciting novel written by Arthur Dugley Vinton, an American author of considerable real merit. It is issued from the press of J. S. Ogilvie, New York, in a 25-cent paper-covered volume.

PRACTICAL BLACKSMITHING is the title of a book just issued by M. T. Richardson, New York. This book is made up of a collection of articles covering the whole range of blacksmithing from the simplest job of work to some of the most complex forgings. Its price

is one dollar, and it can be secured of the publisher postage free.

THE Practical Publication Co., of 21 Park Row, New York, have just issued the "Engineer's Hourly Log Book," arranged to record for each hour all essential points, such as boiler pressure, fuel fired, quantity of steam, etc. It is a useful book for the educated practical engineer.

THE publishers of *St. Nicholas*, announce that that popular children's magazine is to be enlarged, beginning with the new volume, which opens with November, 1889, and that a new and clearer type will be adopted. Four important serial stories by four well-known American authors will be given during the coming year.

DURING the coming volume *The Century* is to have an illustrated series of articles on the French Salons of the seventeenth and eighteenth centuries, including pen portraits of many of the leaders and a detailed account of the organization and composition of several historical salons. A great number of interesting portraits will be given with the series.

THE *Art Amateur* for September is one of the most attractive numbers we have seen of this thoroughly practical art magazine. Theodore Child has a critical review of Decorative Art at the Paris Exposition; and "Montezuma," in his "Note Book," gives some curious facts about the "Angelus" and other pictures. The colored plates are, as usual excellent. Montague Marks, Publisher, 23 Union Square New York.

THE advance sheets of the introduction of that useful work, the Messrs. Poor's Manual of Railroads of the United States for 1889, indicate that the publication will in no way fall behind its reputation for voluminous detail. The statistical matter drawn from the data contained in the forthcoming issue may be fittingly reserved for further consideration. As an annual publication the utility of the Messrs. Poor's enterprise has long been recognized. The growth of the railroad system, which it has recorded from year to year, widens its field of usefulness.

SCRIBNER'S MAGAZINE for August contains spirited out-door papers on the game of lawn tennis and on tarpon fishing; two papers on Tennyson, whose 80th birthday is thus commemorated; short stories by H. H. Boyesen, Brander Matthews, George Parsons Latrop, and E. C. Martin, a new writer, and valuable additions to the electric and railway series. "Form in Lawn Tennis," by James Dwight, M. D., treats of the game from an entirely new point of view, using instantaneous photographs of the Sears Bros. and Petit, three noted players, as a basis of a more accurate analysis of the principal strokes in the game.

Prof. Henry Morton takes the reader with him into the great factories where dynamos and glow-lamps are made. Benjamin Norton describes the purchasing and supply department of a large railway system.

A. C. LORING, the Minneapolis, Minn., miller, puts the matter in this way: The control of some of the mills by an English syndicate could have no possible effect on prices even if the whole state was in the combine. A quarter of our flour is now exported, but it was demonstrated last fall that if prices go too high England will not buy American flour.

## THE SUN AND WIND.

A Dispute once arose Betwixt the north Wind and The Sun, or at least Æsop says so, as to their Respective Superiority, and they agreed to see which could first induce a Traveller to part with His cloak. The North Wind began and blew through his Whiskers with a very Cold Blast, indeed, accompanied with a shower of wet, Wet Rain. That's where the Wind got Left. The Traveller Exclaimed: "Darn this Journeying on Foot, anyway. I shall save time, attain a Green old Age, and leave a respectable name to my children if I travel on that Famous Line, the Wisconsin Central." And he "came in out of the wet," and bought a ticket, and rode in the Luxurious Coaches, and slept at night in the Magnificent Sleepers furnished by that line.

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## NOTES

from the diary of tourists, commercial travelers, business men and others has revealed:

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That the **Wisconsin Central** runs fast trains on which all classes of passengers are carried with commodious and distinct accommodation for all;

That the **Wisconsin Central** has representatives distributed throughout the country, who will cheerfully give any information that may be desired and that its terminal Agents are specially instructed to look after the comfort of passengers who may be routed via its line.

For detailed information, apply to your nearest Ticket Agent; or to representatives of the Wisconsin Central Company.

**S. R. AINSLIE, H. C. BARLOW,**  
General Manager. Gen'l Traffic Manager.

**LOUIS ECKSTEIN,**  
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STATIONS.	DEPART.	ARRIVE.
Champion, Republic,	2:00 A. M.	3:25 A. M.
Iron Mountain, Menominee,	2:00 A. M.	3:25 A. M.
Marinette, Green Bay,	2:00 A. M.	3:25 A. M.
Depere,	2:00 A. M.	3:25 A. M.
Green Bay, Depere, Appleton, Menasha, Neenah,	2:00 A. M.	3:25 A. M.
	2:00 P. M.	3:25 P. M.
	2:00 P. M.	3:25 P. M.
	2:00 P. M.	3:25 P. M.

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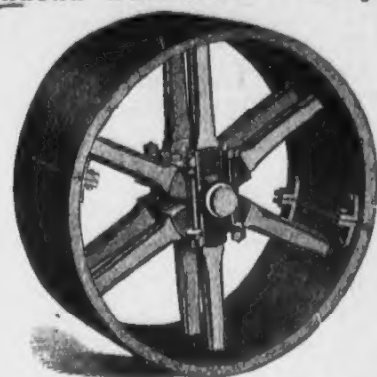
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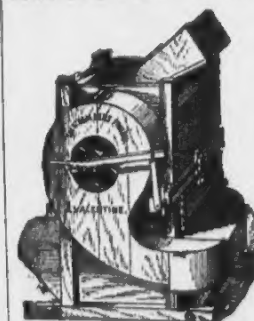
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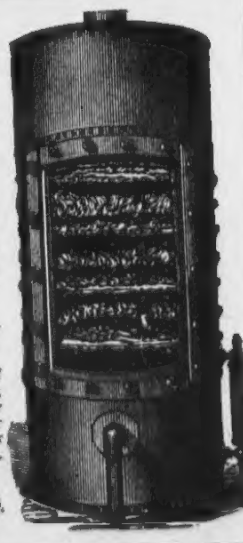
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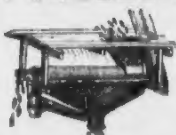
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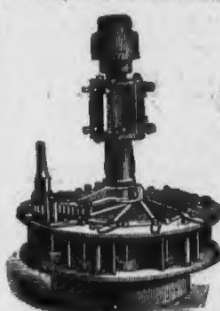
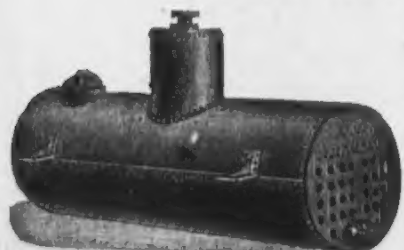
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